DESCRIPTIVE ECONOMICS

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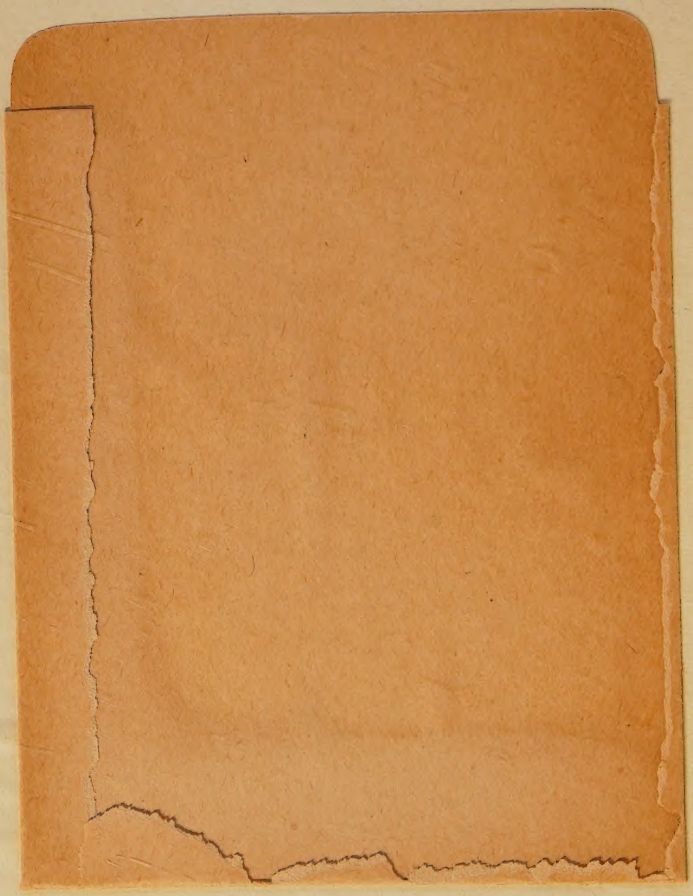

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Descriptive ECONOMICS

By

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PREFACE

DESPITE the large number of introductory books that have been written on economics, there is none, so far as I know, which gives a plain account of the facts, unmixed with theory. My experience in the lecture-room suggests that it is well to go through such a description before embarking on analysis: hence this book, which is based on a course of lectures given for some years past. It is not meant for university students, however, so much as for any one who wishes to know something about the world we live in: for, interesting as a description of material or biological phenomena may be, we live, in a far more real sense, in the social world: and economics deals with an important aspect of that.

I wish to express my indebtedness to Professor Arnold Plant, who was kind enough to read the manuscript and make many useful suggestions.

R. A. L.

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INTRODUCTION

Economics is the science that deals with the way in which people earn their living, and the way they spend their earnings. It does not, of course, pretend to go into the details which are of immediate interest to the individual in conducting his own affairs: it does not understand tailoring like a tailor, or the manufacture of chemicals like a chemist. It is concerned with the public, or social aspects of earning and spending. The older name for the science is 'political economy', and this name has the advantage of bringing out the fact that what it deals with is of interest to the community, and so 'political' in a wide sense of the word: the term 'social' would be better understood nowadays.

People earn their living in society: the problems that faced Robinson Crusoe are of very little concern to us, for even savages have to work in conjunction with their neighbours. Civilized people do very little for themselves: they specialize, i.e. they devote themselves to some particular kind of work which they think will be useful to others, and exchange the goods or services which they produce for the products of others which they need. Production is therefore professional, and each person has to acquire specialized skill or knowledge to enable him to do something useful to the community: but people rarely look beyond the immediate consequences of their actions. A man may devote a little thought to his relations with his employer, or employee, or customer; but the influence of what he does spreads out not only to these, but to others beyond them, and so to the whole community. It is the work of the economist to study these remoter but more general consequences of the way people earn or spend—for spending influences others

as much as working. The economist may be likened to an observer on the top of a mountain. He cannot see the details of the fields that are familiar to the farmers who cultivate them, but he obtains a grasp of the broad features and relations of the countryside in a way that is beyond the reach of the individual farmer.

It is not proposed in this book to deal even in the most sketchy way with the whole subject of economics. The subject is commonly divided into chapters on (*a*) production, (*b*) exchange through the mechanism of money, (*c*) sharing of the product, (*d*) consumption of what is produced, with sometimes a further chapter on the relations of the state to production and consumption. The arrangement is a good one, but is open to the criticism that the abstract conclusions reached are difficult to grasp without more knowledge of the facts than is possessed by a reader who has not made a special study of them. This is particularly true of production; the industries and occupations of mankind are so varied that common experience does not suffice to provide that background of knowledge which is needed in attempting to deduce economic laws of general applicability. The present aim, then, is to describe the chief industries in their economic aspects: the description necessarily involves something that is technical in each case, but the emphasis lies not on the technical features but on the economic characteristics that grow out of them.

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I

Farming: Organization

Farming the most important industry. Organized in small units. Subsistance farming changes to farming for a market. Exceptions to the small farm: English tenant farms, Prussian estates, industrialized mixed farms, plantations: the commercial motive. Land tenure: relative advantages of freehold and tenancy: development in forms of tenure: development in conditions of labour.

Farming is the oldest industry, and is still the most important. There are a few countries which, as a result of modern developments in invention, transport, and finance, have become workshops for the rest of the world, so that in them manufacturing plays the leading part. Great Britain is one of these: it no longer feeds itself, but buys a large part of its food by means of the manufactures it exports. This, however, is exceptional: even in France, a country so renowned for its manufactures, the majority of the people depend on farming for a living, and, taking a general view of the earth, farming is quite the predominant occupation.

The most striking economic circumstance of farming is the small type of organization that prevails. We are familiar with the organization of great companies to erect factories, build railways, carry on banks, and so on, but in agriculture that movement has made very little progress. Most farms, throughout the world, are managed by a single person, with his family and perhaps one hired assistant. In this respect farming has not changed from the methods of centuries, even of millenia ago.

There has, in fact, been more change in the aim than in the method of farm organization. This is a consequence of the

development, in the world generally, of larger social units. In earlier times ' subsistence farming ' prevailed almost everywhere, i.e. farmers were occupied in providing for themselves merely : the social unit was the family, and the products of the farm not only provided food for the family, but wool or flax to be made into clothes, and the materials for house building. Communication with the outside world was difficult, and commerce with it extremely limited, the purchases consisting usually of a few metal implements and perhaps salt. In such conditions the farmer did not think commercially, and carried on his affairs mainly according to custom.

Improvement in transport has broken down this system and effected the transition to farming for the market. Gradually, as opportunity arose, farmers came to sell produce, first in a neighbouring town, which they could reach on foot or with a farm-wagon, eventually, in these days of railways and steamers, to the most distant parts of the earth. The Russian peasant of to-day, while retaining much the same method as his ancestors of the time of Peter the Great, makes part of his income by providing eggs for consumption in London.

Transport has rendered this change possible, but the motive for it is the greater prosperity it yields. Experience shows that the farmer can usually make a better living by sticking to farming, and buying clothes, medicines, cooking utensils and other things from specialists in those various lines : it is an example of the virtue of division of labour. The farmer has naturally become more commercial in his attitude, and he is less dependent on custom. The change is by no means complete : farmers still mostly grow a good deal of what they need for their own family, but on the other hand, specialization has sometimes gone so far that a farmer devotes his whole time to growing a crop, such as cotton or flowers, which he sells, and is as dependent on others

as a townsman, even buying milk and bread at the shop. Such a farmer has become part of a social unit as large as a nation, or even as the world; his prosperity may depend less on his own farming than on the price of cotton on the Liverpool exchange, or on whether the state of trade makes New York buy flowers lavishly or sparingly.

Returning to the mode of organization, we have to note that while the family farm is by far the commonest in most parts of the world various developments from it exist. These depend to some extent on the conditions of land tenure. In Europe large estates were the rule in former times, a relic of the feudal organization which prevailed in the Middle Ages. Feudalism was not due to economic causes, but to the insecurity of the time which made the protection of a lord a matter of real value to the poorer classes. Feudal conditions disappeared but the land remained in the possession of the nobles, or sometimes of merchants who bought the estates of impoverished nobility. Actual farming was done by a class who rarely owned land. This state of things was changed in France by the great revolution, and in most other parts of Europe subsequently—the revolutionary period after the recent war put the finishing touch to the movement in some parts of Eastern Europe, and created a nation of peasant owners. Accordingly, land is now mostly held in quite small portions, and cultivated by the owner, and the laws of inheritance, in France and elsewhere, compel division of properties among the children of the owner, and so keep them small.

There are, however, two very noteworthy exceptions to this. In England the custom of primogeniture has not been interfered with by law, no social revolution has happened, and most of the land is still held in large estates. These are commonly divided into farms of varying size and let for a money rental to farmers.

The typical farm, however, is not small enough to be worked by a family; it is, rather, a business affair, worked by a man of some capital with the aid of wage-paid labour: possibly five hundred acres, and a staff of a dozen men.

Another exception is in Eastern Prussia, where large estates remain in the hands of the nobles. They are not let in the English fashion but are farmed by the owners, with the assistance of university-trained experts in agriculture, and a hierarchy of labour, as in a factory.

In Egypt, India, and China working-farms are nearly all on the family scale: sometimes they are rented from a landlord, sometimes owned by the occupier, subject to the payment of a small sum to the state; and there does not seem to be much difference in effect between the two systems.

In the United States, Canada, and Australia the land was regarded as state property when first colonized, and has been sold cheap to settlers, so that now the typical farm is a freehold, larger than the peasant properties of Europe, but not too large to constitute a family farm.

Even, however, in countries where the land has been split up into peasant holdings, it is possible by purchase, and by the formation of companies, to organize other types of farming, and in every country there will be found various grades of farm, from the allotment, serving to fill up the spare time of a man who has some other chief occupation, to the great estate organized on business lines. That the family farm should still prevail in these circumstances shows that it possesses serious economic advantages. Even in the United States—that land of big business—there is no tendency to displace it. The data yielded by the decennial censuses show that while in the last fifty years the cultivated area has increased enormously, the number of farms has increased in about the same proportion, so that the

average cultivated area per farm remains at about 70 to 80 acres.

Most small farms are engaged in mixed farming—chiefly corn and cattle together: but of course many kinds of specialization are to be found where conditions favour it, cotton, flax, jute, dairying, poultry, citrus and other fruit growing, vegetables, flowers, &c. The variants from the small farm may be put in two classes, (i) mixed farming on a larger scale, (ii) special culture on a large scale. Of the former the best illustrations are those mentioned above in England and Prussia. In England the farm, not usually the property of the cultivator, is nevertheless large enough to attract a man possessing considerable capital and business ability, in addition to knowledge of agriculture: as an enterprise it is many times larger than the usual peasant-holding of Europe, and permits of a degree of division of labour that is not possible on the small holding. The farmer devotes himself to superintendence, deciding what crops to grow, buying and selling, &c., whilst the manual labour is done by his employees. On the Prussian estate the same tendencies are carried much further: the enterprise is large enough to employ, in addition to a large number of labourers, a staff of specialists —agriculturists, engineers, accountants, and so on—with a man of the best education at their head. There is much more likelihood, that the best methods will so be used than when a single uneducated man has to undertake the whole complex task.

In temperate countries mixed farming carried out in this fashion seems to be the highest development, but here and there the local conditions make a special culture more profitable; for instance, in the wine-growing districts of France or the wheat-fields of California. There, enterprise sometimes grows to a large scale; the 'bonanza' farms of California produce wheat sufficient to support hundreds of families, and are

provided with a light railway system for transport, telephones, and a commercial department like that of a large factory. More often the specialized large farm is a ' plantation ', i.e. an enter prise in a tropical country where the manual work is done by natives of the country supervised by a staff of whites. Thus, there are sugar plantations in the West Indies, tea in Ceylon, rubber in Malaya, and many others. They arise primarily because of the suitability of the climate for the particular culture in question, but the form of organization is due to the possibility of combining cheap manual labour with highly paid skilled direction : that necessitates working on a large scale.

Large business farms such as these, and especially plantations in tropical countries, are commonly organized in the form of limited companies, the capital being subscribed by shareholders in Europe : the supreme direction is then exercised at the headquarters of the company, and the directors there appoint a manager whom they send out to control the work locally. This form of organization will be discussed more fully under the head of manufacturing : here we may merely note that in it the commercial motive is fully developed—the last trace of subsistence farming has disappeared.

A company working a plantation or other large farming business, as it disposes of plenty of capital, will usually buy the freehold of the land it proposes to cultivate. Smaller farms are often worked on some form of tenancy : it is inevitable that this should sometimes happen as the persons best qualified to farm are not necessarily owners of land, nor even owners of enough capital to buy the land they want ; it would be a great social loss if the opportunity for farming were restricted to those who own land.

In most countries there has been a strong movement in favour of giving opportunities for land ownership to the

farming population : this can be done by state assistance towards purchase on easy terms. It is felt that a man always takes more interest and puts better work into the farm if he owns it, and that the small occupying owner is, from his sturdiness and his healthy occupation, a most desirable element in the community. But the advantages are not all on that side. A farmer with a small amount of capital will usually succeed better if he devotes it to working purposes (live stock, implements, &c.) instead of locking it up in the purchase of land : and if he does buy land he is almost sure to have to raise a mortgage loan on it, and the mortgagee is more hampered than the tenant. Again, a good system of tenancy with farms of varying size serves as a ladder for the advancement of the capable man : he is not bound to a particular piece of ground, but when he has made sufficient progress can give it up and take a larger one. Laws have been passed in England to facilitate the acquisition of small holdings either by purchase or tenancy from County Councils, and it is found that tenancy is the more popular.

Tenancy has passed through several stages : in feudal times in Europe the peasantry held land on servile tenure, i.e. in exchange for a certain amount of labour they had to perform for the lord. The next phase was represented by the land and stock lease, in which the owner provided not only land but farm stock, the tenant being quite a poor man—often an enfranchised serf—who could offer nothing but his labour : the produce of the farm to be divided between the two. Gradually, as the tenant became better off, and had his own cattle, this changed into an agreement to lease the ground only, on shares, the landowner receiving perhaps one-third or one-half of the crops. This system, known in French as *métayage*, is still common in the South of France, and in Italy. It works well where the tenant is protected by custom or by law against arbitrary dispossession

by the owner : but it does not offer encouragement to an enterprising man. Cultivation is bound to follow traditional lines, as any new departure would need the consent of both parties.

In the most advanced countries share tenancy has given place to tenancy at a fixed money rental. This is a thoroughly business-like arrangement, putting the tenant in an independent position : he can use his own judgement as to the details of farming, and he gains the full advantage of any superior capacity he may possess. The agreement needs to be drawn up with care : in a country like England where the system is familiar the points of it have been fully worked out. The most important are that the owner should be protected against damage or misuse of his property, and the tenant assured a long enough period of tenancy to work out his plans to advantage, and guaranteed compensation for reasonable improvements he has made on the land, the value of which reverts to the owner at the termination of the lease. When carried out in this fashion the leasehold system seems to be one of the best forms of tenure ; in particular it tends to give opportunities to the capable farmer who has not inherited property, and to eliminate the incapable man who would encumber the ground. This fluidity of tenure, putting the best brains in control of the natural resources of the country, helps to increase its total wealth.

Sometimes the legislature, in its desire to give security to tenants, has gone so far that the legal rights he obtains amount practically to a share in the ownership. This is a clumsy system, obstructive to fluidity of tenure without reaching the full benefits of occupying ownership. Events in Ireland led to its development there, and it proved so unsatisfactory that in the end the tenants were assisted by state loans to buy out the landlords altogether.

The history of land tenure has been closely associated with

that of the forms of labour engaged in farming. Going back to days before the feudal manor and to countries other than Western Europe, in which the manorial system prevailed, one finds that slave labour was often the basis of agriculture. When slavery was treated with strict logic the slave was regarded as a productive machine, existing merely for the benefit of his master; the food and housing provided for him were merely those which were needed in order to get the best work out of him, just as with a horse or an ox. Slaves from alien countries, conquered in war or captured in the course of trade, have often been treated in that fashion; but even in dealings with slaves humanity creeps in, and, especially when slaves were born on their master's estate, their treatment tended to become that of an inferior member of the family rather than of a machine. The progress of emancipation usually led to the status of serfdom; the serf was bound to render certain services to his lord, and he could not leave the estate or change his occupation without permission: but otherwise he was free to live his own life, and in most cases he had the opportunity to do some farming for himself. Then, if he worked harder he got the advantage of it himself, whereas the slave has no inducement to work except fear.

Gradually the serf was freed from his obligations, and, as industry grew, the demand for labour led to the offer of wages. Hence developed the various classes of farm workers who are associated with different kinds of tenure to-day. At one end of the scale is the peasant proprietor, having the freehold of a piece of ground and working entirely for himself; at the other the farm labourer who neither owns nor rents any land but works for an employer, and is paid weekly wages, according to a trade-union scale, like a factory worker.

Between these are other groups such as the small tenant farmer, the share tenant, the employed labourer who has an

allotment of his own besides, the labourer who is allowed to run some cattle on his employer's land. Indeed, it is desirable that there should be many kinds of farm occupations, and all sizes of farms, in order that the different aptitudes of people may be met, and each fitted into the conditions which afford him the best development he is capable of.

2

Farming: Technical Progress

Technical progress of farming. Individual ownership: rotation of crops: chemical fertilizers: biochemical and biological research: machinery and transport. Comparison between India and the United States: measurement of efficiency.

Relative advantages of small- and large-scale farming. Farmers' co-operative societies.

Before discussing the advantages of rival types of organization it is desirable to glance at the changes in technique that the history of farming shows. Although the notion of progress due to scientific discovery is more commonly thought of in connexion with manufacturing and town occupations, it is really equally true of agriculture and pasture. Immense progress in efficiency has been made as compared with the methods of earlier times, or of barbarous peoples, or even of India and China at the present day. The changes that have led to increase in output are partly legal, but mostly technical, and in the latter case based on natural science.

Of the legal changes which have been needed to give full play to the farmer's work and enterprise, none is so important as the institution of individual tenure of land. Early communities were socialistic in their use of land: whether it was owned by a chief or by the community as a whole, the employment of it

was shared among the men according to traditional rules, and the individual had no rights beyond what tradition allowed. The land was divided up afresh each year, so that a cultivator could take no permanent interest in any piece of ground, and usually the ground allotted to one cultivator consisted—preposterous as it seems to modern views—of a number of detached strips, so that much of his time was wasted in walking from one to another. This was the state of things in Western Europe in the Middle Ages; in Russia it has not yet quite passed away; in the native villages of South Africa it still holds. To give a definite piece of land to an individual for his continuous occupation and culture is therefore the first improvement needed, and is the starting-point towards good agriculture.

The next reform of far-reaching importance was the rotation of crops. In primitive times it was customary to crop a piece of ground one year and move on to another the next: when conditions became more settled this grew into a system in which the ground was cropped every alternate year, or two years out of three, and left fallow in between. The reason for this is that a crop takes certain chemical constituents out of the ground, and these have to be restored partly by the action of air, rain, and sunlight on the soil, and partly by manuring. It was discovered, chiefly by certain pioneer British agriculturists of the seventeenth and eighteenth centuries, that by growing different crops in a suitable order the fertility of the soil could be kept up without the need of fallow. This meant a great addition to the amount of food produced on a given area.

The rotation of crops was a discovery made before the age of chemical science, but it is essentially a matter of chemistry, though arrived at in an empirical manner. Now that chemistry is a highly developed science many problems of agriculture come out in a clear light. Perhaps the most important of these

is the constitution of the soil. Soils come from the wearing down of rocks, and they vary both in their chemical ingredients and in their mechanical condition. The experienced farmer can judge to a certain extent for what purpose a given soil is best suited, but his knowledge is rough and liable to error : chemical analysis not only shows with certainty what there is in the soil, but shows what additions are needed to make up its deficiencies and give it a well-balanced fertility, suitable for growing certain crops. A soil may, e.g., be well off in nitrogen compounds but lacking in potash : the addition of a small amount of this chemical will then add greatly to its value. The manufacture of chemical fertilizers has progressed along with the growth of chemistry, so that it is now possible to find out the precise needs of a soil, and supply them.

This is an example of a purely chemical invention, but biochemistry helps in other ways. Thus, plants absorb nitrogen compounds from the soil ; a large amount goes into corn crops, for instance, and when these are removed for human consumption, the nitrogen has to be replaced. This may be done by the aid of artificial fertilizers, but it has been discovered that certain leguminous plants lead to the growth of bacteria which have the power of absorbing nitrogen from the air and working it up into such compounds as are useful to other plants. Hence, a crop of those plants besides yielding valuable food, tends to restore the fertility of the ground for other crops. This indeed is a partial explanation of the advantage of rotation, which was discovered empirically : modern biochemical knowledge allows of the rotation being designed accurately and with the best effect.

Important as have been the contributions of chemistry, it is probable that biology will lead to even greater advances in the future, for farming is the art of getting useful products by the cultivation of living organisms, animal or vegetable. Farmers

have always recognized that some specimens are better than others, and the more progressive among them have taken pains to secure the best qualities. But progress in plant or animal breeding was slow and insecure until the scientific study of heredity indicated the lines along which it ought to be pursued. The body of generalizations on heredity known as Mendelism has of late been of great value to farmers, although the science is still in a primitive stage : as an illustration of what can be done we may mention the work done at Cambridge in breeding varieties of wheat which are immune to the disease known as rust. These rust-free wheats have caused a noticeable increase in the average yield in England.

Another direction in which a great advance has come about in the last century is in the means of transport, and in the implements for cultivating and handling crops. The improvements previously mentioned are of a kind to increase the weight and improve the quality of the crops grown on a given area : transport and machinery do not have that effect, but they reduce the amount of labour needed to get the crops. Both kinds of improvement in the technique of farming tend to give more produce for a given amount of work, i.e. to cheapen produce.

Much has been done, too, in the way of permanent improvement of the land itself. Of these engineering works the most important are the schemes of irrigation carried out in countries of insufficient or irregular rainfall. Egypt, which is altogether rainless, has been made rich and flourishing by the skilful use of the water of the Nile. This is distributed over the land by the aid of works some of which were used in the days of the Pharaohs, but some, such as the great dam at Assouan, are the outcome of modern scientific knowledge.

We may go further, and get something of a measure of the advance made. To do this we will compare two countries, one

in which farming is done in a primitive way, and one which makes use of modern farming methods. The countries chosen should be large and self-contained if possible, and it happens that two such countries exist—India and the United States. Farming is not entirely devoted to the production of food, but this is so much the largest part of farming that we may fairly test the self-containment of the country by means of the exports and imports of food. Taking the average of the years 1922 to 1924 we find that India exported food products to the extent of 675 million rupees per year, and imported 341 million. The difference, 334 million rupees, though at first sight a considerable sum, is only one rupee per head of the population, and, poor as the people of India are, one rupee's worth of food is a trifle compared with their annual needs—it would hardly supply a peasant with food for a week. We may ignore it, and say that India provides enough to feed itself and no more. Next, examining the population census for 1921, it appears that 73 per cent of the inhabitants are described as ' dependent on agriculture, pasture, and fishing ' for a living (fishing is a very small item). Making some deduction for those engaged in producing jute, cotton, indigo, and other non-edible crops, we may say that two-thirds of the effort of the country goes to food production, or in other words, two families have to work to feed themselves and a third family. That is the situation in a country where farming is done almost entirely in the same way as it was done a thousand years ago.

America also is practically self-contained in the matter of foodstuffs. True it exports certain kinds, such as wheat, and imports others, such as coffee ; but there is nearly a balance, the average figures for 1922–4 being exports 943 million dollars, imports 805 million. The excess of exports amounts only to $1\frac{1}{4}$ dollar per head of the population. Now the census of 1920 shows that

the farm workers constitute only 26 per cent. of the total occupied population. Again putting this in round numbers, one may say that one American family is able to provide food for itself and two others : and it is hardly necessary to add that the average American is better fed than the average Indian.

This vast improvement in agriculture is really the basis of our civilization. People must be fed before they can do anything else, and it is only because less effort is needed to procure food than formerly that labour is set free to produce those innumerable goods and services which go to make up our civilized life.

In estimating agricultural efficiency, and especially in comparing different countries, two sets of statistics may be used—output per acre, and output per head. It is necessary, for clear thinking, to discriminate carefully between the two ; some very illegitimate conclusions have been arrived at by neglecting to use the data in the right way. A country which is thickly populated, and in which a great deal of labour is used on the land will usually show a high yield of crops per acre ; but this is not conclusive as to the excellence of its farming. The population engaged in farming may, as a consequence, be badly off : the yield when divided amongst them may give a smaller share to the individual than in another country where the cultivation is rougher but there is more land available for each worker. We cannot form an opinion on the relative efficiencies till we decide whether the aim is the maximum production of food in the country or the maximum prosperity of the farm-worker, or some combination of the two.

We may now discuss the advantages and disadvantages of the types of organization that were described above. The extreme types are, on the one hand, the small farm cultivated by the owner and his family, with possibly a little hired assistance in times of pressure, and on the other the great estate organized on

business lines, with board of directors, expert manager, departmental heads, &c., making full use of machinery and modern appliances. From the point of view of efficiency the chief, perhaps the sole, argument in favour of the small farm lies in the personal interest of the farmer. He often puts in an amount of work that no paid employee would do. He feels that everything he does is for his own advancement, and especially that any improvements he makes on the land will put him in a better position in the future : more than that, it is hardly possible to work on one's own piece of land without feeling affection for it, and feeling a satisfaction that is quite apart from money considerations, in seeing it improved and prosperous. The peasant, in fact, often works too hard : starting before daybreak and keeping on till bedtime, there may be nothing else in his life than working on the farm. There is another way too in which his personal interest may have a beneficial effect : the material he works on is not uniform like that used in a factory. Animals and trees have their individuality, and even the soil varies in quality over quite short distances. The small farmer giving intent observation to every detail of his holding may get better results out of it than could be obtained by the necessarily somewhat mechanical treatment given by employees of a large enterprise.

Against these advantages must be set the peasant farmers want of specialization, want of knowledge, want of capital, want of business experience. Despite the personal character of the work, and despite the fact that owing to the great extent of a farm it is not possible in a large enterprise to exercise the same supervision as in a factory, the balance of advantage is against the small holding. It seems to be the opinion of all the leading authorities on agriculture that the greatest output is to be obtained from the large organized farm.

The peasant and the farm labourer are far from being un-

skilled workers : a great deal of traditional knowledge, and of hereditary and acquired skill go to make up their craft. But agriculture has passed beyond a traditional stage, and it would be absurd to expect of them a knowledge of botany, of agricultural chemistry, of veterinary science, of engineering. Though something may be done by organized instruction for farm workers, it is not possible to gain the full advantage of modern discoveries except by a proper division of labour ; each person should be put to the task he is best suited for, and the most capable men should direct operations.

Again, one of the weakest features of the small farmer is his want of capital. Possession of capital gives the means of seizing opportunities when they arise, and of employing the best appliances and methods even if it is necessary to wait a long time for the return. Small farmers are often so badly off that they cannot even wait until their crops are reaped and ready for the market, but must sell them, whilst still growing, at disastrously low prices : such men are commonly in the grip of a local money-lender, probably the store-keeper who supplies them with what they need to buy. It is very difficult to arrange for a small farmer to obtain credit on reasonable terms, for his transactions are very small in scale, and he has no convenient security to give for a loan. The large estate is likely to start with an adequate supply of capital, which has not necessarily been accumulated in farming but may be subscribed by persons in other occupations : or if the estate belongs to one owner he is probably a person of considerable means.

In the matter of business experience, too, the small farmer is likely to be at a disadvantage. A peasant may be a shrewd bargainer in the local market over a horse or a pig, but he is totally ignorant of world economic conditions, and unfamiliar with marketing produce that is dealt with on a world-wide scale.

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Hence the growth in scale of markets is against him, and he is likely to get a smaller share of the value of his produce than under primitive conditions. The 'large' farmer, as the term is known in England, i.e. a man who employs a score or two of hands, is likely to be no better off in this respect. A company or group of companies who can afford to employ marketing experts are in a different position.

At the same time the balance of advantage is not so great that the organized estate has yet made much headway. The ordinary farmer works primarily to provide a living for his family: he may not do it in the old 'subsistence' manner, but so long as he gets enough money for his needs he retains his position, regardless of whether larger profits are to be made by a different mode of employment of the land. Even where the land does not belong to the cultivator conservative influences are very strong, and a change of system could only come about slowly: moreover, political influences may prevent development taking place along the direction of the greatest, purely economic advantage. The social virtues of the small farmer have been recognized in all countries.

A method for overcoming the economic disadvantages of the small holding which has roused enthusiastic support, lies in the formation of co-operative societies. The principal aim of such societies has usually been to obtain good terms in disposing of the produce of farms: societies for this purpose naturally succeed more readily among farmers who are engaged in the same kind of production and who are not too different in the scale of their work. Co-operatives have been particularly successful among small dairy farmers, Denmark being the leading case. Their primary function there is to run a creamery to which the members can take their milk to be worked up into butter or otherwise dealt with and sold. The individual farmer

is in this way relieved of all the work of selling, and can devote his whole attention to producing: the society, working on a much larger scale, is able to employ a specialist to supervise the manufacture and sale. The quality of the product is better and more uniform, and it obtains a more ready market in this way.

Societies organized for selling produce quite naturally acquire other functions: they often buy farm requisites, such as implements or fertilizers, giving to their members the advantage both as to price and quality of purchasing on a larger scale. They sometimes buy expensive machinery for their members to use in turn, whilst each one separately would have too little use for the machine to justify buying it. Perhaps the most valuable service, however, is to act as a credit agency. To the peasant farmer a loan of a few pounds may be of great use, but the affair is too small to attract the ordinary commercial banker, and the farmer may be driven to obtain it on exorbitant terms from a money-lending tradesman. A society of a hundred small farmers, however, if it is prepared to give a collective guarantee, enjoys good credit, for there is no more stable and trustworthy class in the community: it can readily negotiate a loan of a few hundred pounds from a bank, and distribute the money in small advances to its members.

It must be observed that the use of a co-operative society in any of these ways is not a panacea: it is merely an attempt by the farmers to provide themselves with certain commercial services which can be obtained, at a price, from the usual commercial sources. Unless the work is done efficiently and economically by the society there is not only nothing gained, but members may be involved in loss and difficulty. The greatest real gain of co-operative methods is in the training to work together, and the experience in handling affairs. The members of a co-operative society should not be very unequal in financial standing:

for this reason it is customary to give each member one vote, irrespective of the amount he subscribes to the capital of the society. The society becomes a meeting-place where members learn to overcome mutual suspicions, and to take an interest in matters of common importance. If they merely appoint a manager and then fail to give any further attention to the society, they will get little good out of the society, and may very probably be involved in financial disaster. In some countries governments have been seized with such unreasoning enthusiasm for co-operation that they have compelled farmers to join co-operative societies, and market their produce in that way. Such a plan, however, is likely to be inefficient, and to lead to appeals to the government for help to avoid failure : it is the spirit of co-operation that is of real value.

3

Mining

Mining. Narrow localization. Rough social conditions. Methods of financing : royalties : vendors' shares. Magnitude of industry.

Mining, like farming, is classed as a ' primary ' industry, i.e. one engaged in extracting wealth as directly as possible from the stores of nature. Its leading economic characteristic is its narrow localization. While farming is carried on over the greater part of the land-surface of the earth, mining is concentrated in a few spots. Some of the more accessible minerals, such as sand and lime, are pretty widely spread, but even they are only worked here and there, where the quality is above the average : many minerals, especially the metallic ores, are only

known to exist in a few places. This is true of the ores of gold, silver, tin, copper, lead, and even more markedly of the rare metals, some of which, such as cerium and vanadium, have become industrially important. Even if, like iron ore, deposits are widely scattered but few of them are worked : for the difference in quality is great, and it is better to concentrate effort on rich ores, even if it is necessary to transport the product long distances, than to incur the labour of extracting an inferior and sparse deposit.

The concentration of mining gives it a peculiar social character. Miners have to work in large numbers together, and yet, very often, in out-of-the-way places, where they scarcely come into contact with those engaged in other industries. Moreover, the work is disagreeable and rough. It is not to be wondered at if miners form a rough and discontented class. Unlike farm workers whose earnings are small, but whose out-of-door life offers some compensation, miners have to be tempted by high wages, and have little opportunity of spending them to advantage. Often the life of the mine is so uncertain that it is impracticable to provide the capital needed for substantial houses, and the accommodation is consequently shoddy in the extreme : there is hardly any recreation to be had except drinking ; and educational facilities for the children are scanty. At the same time, owing to the concentration of employment, trade unionism is usually much stronger than among farm labourers, so that miners' unions are often supporters of extreme views on labour.

Miners who work in a long-civilized and thickly inhabited country, like those who dig coal in England or Germany, are not quite so badly off, though even in those countries mining villages are usually deplorable. However, the life of a coal mine can be estimated with some confidence, and in favourable sites

may last as long as a century ; and nowadays the growth of the public conscience as to conditions of living, together with the pressure of the trade unions is effecting a change. In the new coalfields of South Yorkshire and Kent the provision of well-laid-out, attractive houses for the workpeople forms an integral part of the enterprise.

Rich mineral deposits are of great value. Even in the case of agricultural land some tracts are so much more fertile than others that people are willing to pay a considerable price, or annual rent, to secure the use of them : in every form of leasehold tenure the landowner obtains a share of the produce, or of its money value, as a consequence of his mere ownership. Much more is this the case with mines : some occurrences of minerals are so valuable that the fortunate owner of the land may be paid a large income for the mere privilege of working them. There is this difference between a farm and a mine : the farm yields its crops indefinitely, whilst the mine works by extracting a limited store, and comes to an end sooner or later. Otherwise the price paid for working a mine is similar to the rent paid for a farm. Such a price must necessarily be paid, whether the minerals belong to the state or to private persons : it may be described as the purchase price of the mineral, purchasers paying all expenses of removal. The form in which it is paid varies, and exercises a good deal of influence on the development of a mine field.

In Great Britain minerals are, by law, the property of the freeholder. He does not usually wish to extract them himself, and accordingly, when a valuable deposit is located, he usually leases the right of extraction to a company formed for this purpose. In the case of coal, which is much the most valuable of the British minerals, the consideration paid by the company commonly takes the form of a fixed sum per ton of coal raised—

the term 'royalty' is given to this payment, which as a rule is from sixpence to a shilling per ton. The exploiting company is willing to pay this, because it expects that after doing so it will still be able to earn a satisfactory profit on its investment. The richer the coal deposit appears to be, the higher royalty the company can afford to pay; but whereas the common experience of farmers enables them to make a close estimate of the productiveness of a piece of farm land, it is difficult and uncertain to assess the richness of the minerals far beneath the surface. Geological knowledge and the use of bore-holes do something to help, but at the best the thickness of a coal seam and the quality of the coal are uncertain, so that a mining company cannot afford to risk the offer of more than a small royalty. If, then, the mine turns out a rich one the exploiting company makes profits much above the average: on the other hand, there are numerous cases of failure.

When it is proposed to start a mine in a neighbourhood where the land has not acquired much value for other purposes, the exploiting company will probably buy the freehold of the area on which the valuable mineral is found. This is perhaps the commonest plan, as new discoveries of minerals are usually in remote places, the resources of the old countries being pretty well known already. The distinction between payment for the use of valuable natural resources and the ordinary profits of business then disappears—the accounts of the company show no such distinction as that between royalties and profits of an English coal mine, for both belong to the same shareholders.

It is, however, really shown in the device of 'vendors' shares'. The parties who first get hold of the land on which the minerals are found are able to bargain for a part of the profits, and they commonly get it in the form of shares in the operating company. Thus, if a company were formed with one million

shares of a pound each, of which 600,000 were paid for by subscribers, and the rest allotted free to the vendors of the ground, the company would have £600,000 in cash with which to work the mine, and the previous owners of the land would receive 40 per cent. of the profits. Both parties participate in the fortunes of the mine; the original value and the value of the exploitation are merged.

It is sometimes thought that royalties and vendors' shares are iniquitous devices for defrauding the workpeople of some of their wages or the shareholders of some of their dividends—which of the two is regarded as the sufferer depends on the point of view. This is a mistake: the particular persons who are working on a mine, or who have subscribed capital to work it, have no claim to the exceptional gifts of nature that may lie there. It is reasonable to argue that private ownership of minerals should not be allowed; but the alternative claimant is the community as a whole, represented by the state. In England a legal decision of several centuries ago gave to the surface owners the immense wealth of coal, whose value was then almost unknown: some of the colonies have been wiser, and have reserved for the state the rights in wealth lying buried in the ground. But whoever is the legal owner has the claim to the surplus over what is needed to pay ordinary profits and ordinary wages: royalties and vendors' shares are attempts to assess this surplus—both rather crude. A more scientific plan has been evolved in exploiting the gold reefs of the Eastern Witwatersrand.

This area is an extension of the known gold workings in the neighbourhood of Johannesburg, and the freehold of most of the land belongs to the Government of the Union of South Africa. Suitable portions for constituting mines have been marked off (these are large, in order to gain the full advantage of modern economical methods, and need a million or two of

capital to develop), and are offered publicly for leasing. The lease provides that the profits are to be ascertained according to a defined system of accounting, and a certain percentage paid to the Government as rent : the percentage is reckoned on a sliding scale such that the more profitable the mine turns out to be, the larger the percentage paid to the government. The scale is devised in such a way as not to discourage the company by appropriating profits that are due to economical management, but to ensure that the bulk of the surplus due to the richness of the ground accrues to the state.

The portion of the population supported by mining varies very much in different places, but even in a country so dependent on mineral products as South Africa it does not exceed about 10 per cent. In Great Britain miners are about 5 per cent. of the occupied population. In newly opened countries it often happens that a region flourishes first as a purely mining settlement : minerals offer such a concentration of wealth as to attract settlers in the face of great difficulties of transport, when no other industry would. Such districts go through a regular evolution to attain a more diversified culture. California is a good instance of the way in which the wildness and romance of early miners' discoveries have given place to more ordinary industries : it is now better known for fruit than for gold.

4

Manufacturing: Development

Manufacturing. Handicrafts: medieval gilds. Unemployment. Domestic system: sweating. Mechanical power: factory system. Industrial revolution: abuses: factory laws. Limited liability.

The word manufacturing means making by hand; nothing could bring out more concisely than the word does the distance travelled in organizing the vast factories of to-day, full of elaborate machinery, where the 'manufacturer' is a superintendent of others' work, and his aim is to turn out machine-made products with as little human labour as possible.

The transition in economic type which has made so little progress in agriculture appears in its fullest development in manufacturing, and it will be useful before discussing present organization to sketch the historical stages that have been passed through. It must not be supposed that these stages have actually disappeared from the world, or even from the most advanced countries; each form of organization retains some usefulness, but the type characteristic of the period changes.

The earliest type is comparable with the family farm: it is that of the craftsman working alone. Even in primitive times the family did not often remain the complete economic unit: growth of population soon led to the formation of a village out of a group of families, who, probably for the sake of mutual protection, preferred to remain near together. Then a certain amount of specialization easily came about: though most of the villagers remained farmers, a few engaged in crafts such as boot-making and blacksmithing for which the village provided a market.

In Europe five centuries ago, as in China to-day, the bulk of non-agricultural production was that of independent craftsmen, working alone except for the employment of enough apprentices to continue the supply. In those parts of the world where the system remains at the present day, because modern means of transport have not fully ' opened up ' the country, the craftsman is always more or less exposed to the competition of machine-made goods, and the struggle that he keeps up is mostly a losing one. But even in the midst of western civilization the independent hand-worker has a place. It is sometimes in a low-grade occupation that has failed to attract the manufacturing companies, such as boot-mending; sometimes because the demand is localized and diverse, as in plumbing; sometimes, however, because the craftsman's work is superior to that of the factory, when a hand-worker in jewellery maintains his position by his skill. The last group tends upwards towards the arts, in which independent work is the rule. But even when there is no question of machine-competition, capitalistic organization may prevail over the independent worker, so that the number of craftsmen working in the primitive fashion directly for customers is now small.

Certain features of early organization are of interest to the present-day world, and among these the gild which flourished in medieval Europe deserves mention. Trade, in those times, though difficult, did exist in articles of high value, so that wealthy customers could obtain such goods as armour, jewels, and rich clothes from a distance. Accordingly, the superiority of certain producers had a chance to show itself, and centres grew up, famous for particular classes of manufacture which they were able to sell in a wide-spread market. In a town where a number of such craftsmen were congregated they generally formed a gild for mutual support. It was partly a social club,

but it laid down strict rules of a technical character, the aim of which was to sustain the reputation and prosperity of the craft. To this end there was agreement as to prices charged to the public, and, as far as possible, exclusion of competition by non-members: there was also a definite attempt to maintain the standard of workmanship and guarantee the public against unscrupulous craftsmen. Modern trade unions have a much more limited and one-sided objective: suggestions have been made to widen their scope, and try to restore gilds in a form suitable to modern industry: the nearest modern representatives of the gilds are professional associations, such as those existing in the legal and medical professions.

It is sometimes thought that unemployment is a modern malady: nothing could be farther from the truth. Indeed, on consideration, it should be obvious that the bulk of independent craftsmen can never have been certain of a constant stream of orders that would keep them supplied with work and income. Records, both from Greek and medieval history, show the situation of artisans often to have been far worse than now; sometimes they had only work for half, or a third of their time, and were kept in extreme poverty as a consequence. Indeed, it is this same difficulty which prevents more than a few craftsmen at the present day from establishing themselves as independent workers, and it led to the next stage in manufacturing organization—the 'domestic' system.

Whilst the independent craftsman aims at making for the consumer, he of course will not refuse a commission from a merchant, who buys in order to sell again. The craftsman cannot as a rule afford to make for stock when he is without orders; the merchant, having more capital, can give orders for goods even when he has not the prospect of disposing of them immediately, so such merchants' orders are very useful to the

craftsman at a slack time. It is easy to see how this state of things may pass over into one in which the craftsman works all the time on orders given him by a merchant : he may, in fact, come into a position of complete dependence on the merchant-employer. This is the domestic system of manufacture. The craftsman still works by the old methods, in his own workshop, and at his own times : he may provide the raw material himself, or this may be supplied by the merchant, especially if it is expensive : but he has no longer the economic independence which was the leading characteristic of the earlier type.

The domestic system of production was the prevailing type in Western Europe after the close of the Middle Ages, and it is still found in some industries, especially in cheap tailoring and dressmaking. It is more liable to the abuse of 'sweating', i.e. of paying starvation wages, than factory work. The employees are disunited, and individually very much at the mercy of the small capitalist who employs them : the employer is usually of the lowest class, not well off, and often grasping. When the work is carried on in a large city there is no effective public opinion to prevent unfair treatment. It is possible that when the system first grew up the strength of custom existing in the smaller communities of those days, together with the influence of the gilds, which had not quite died out, may have made conditions more tolerable ; at present the domestic system appears to be the worst type in use.

When the capitalist-employer reached the stage of giving work regularly to a considerable number of craftsmen, who depended on him entirely, it was a simple step to call the workmen together into a factory, with a view to better supervision, instead of leaving them to work in their homes. Examples of this are to be found as far back as Tudor times, but the motive for the change was not strong until the invention of mechanical power.

and of power-driven machines: a phase which dates from the eighteenth century. When by means of water, or of steam-power, it became possible to drive a number of machines simultaneously—lathes, or spinning-wheels, or looms—it was clear that the advantage of machinery could only be gained if the workmen were assembled in a factory. The steam-engine was made into a practical affair by Watt, and somewhat later other inventions made in England and Scotland caused factory production to become so vastly more economical than hand-work, that in less than a century manufacturing in the old sense nearly disappeared, and machine-work took its place. This transition, known as the Industrial Revolution, lay in Britain approximately between 1750 and 1850. In its social consequences it is probably the most far-reaching change in history.

In former times manufacturing was scattered throughout the country: even in the towns that were mainly devoted to manufacture the aggregation of population was not great, and many of the craftsmen combined their work with some agricultural occupation. After the revolution the manufacturing population was concentrated in towns, of the most depressingly monotonous kind, cut off from the countryside both in the geographical sense and in interests. Moreover, instead of being craftsmen the workpeople, except for a few of superior observation and inventiveness, were reduced to machine-minders, who had scarcely any interest in their work beyond the receipt of the weekly wages.

The transition was inevitable once mechanical inventions had been made, because of the immensely greater efficiency of machine-production. The world could not be content with the production of, say, one shirt when the same amount of labour, differently used, would make five, and so give people the opportunity of wearing an adequate supply of clean clothes: but

the new processes sprang up without any one having thought out the social consequences. Hence evils arose which it took many years to remedy and which have not been fully dealt with even yet.

The typical factory of the period was a business belonging to an individual or small partnership, and employing a moderate number of men—rarely more than a hundred. The owner did all the head-work himself, with the aid, perhaps, of one or two poorly paid clerks, and he was in personal touch with all his workmen. The owner was practically autocratic, and though often he came from the working-class himself, having got on in the world by enterprise and luck, there was a vast difference in pecuniary position between himself and his men. Many of the features of the domestic system passed over into factories without criticism, although their consequences in the new system were quite different. Thus, a workman in his own house was accustomed to long hours, but they were not strictly marked and he could break off from work when he pleased. The factory was run by steam-power, generated on the premises, and had fixed hours for opening and closing: the employees had to attend punctually and keep up with the remorseless machinery. Nevertheless, at first it was thought that twelve or even fourteen hours was a reasonable working day—the effect of the new conditions was not realized.

Again, domestic workers had been in the habit of getting their children, even when quite young, to help. This was bad for the children, but still the father was usually a kind and easy-going master, and the work was mixed up with a certain amount of play and even sometimes of schooling. When the factory-system became common it was thought natural to employ children—even at the age of six or seven—but it meant employment at long hours of continuous drudgery, ruinous to the health of the growing child.

These abuses were not remedied from within the industry: the workpeople were too weak, the employers too ignorant and callous. It is to the credit of members of the medical profession, and of the House of Lords, that attention was drawn to the abuses which had grown up with the growth of factories, and eventually, in 1800, a start was made with legislation to control the conditions of industry—in the first instance to forbid the employment of young children. The law passed in that year was the beginning of what is now an elaborate code of factory legislation. At first it dealt only with the position of women and children working in factories, but gradually the scope was widened to include even the men who had been supposed capable of looking after their own interests unaided. Laws deal with the hours of labour, with sanitary conditions, fencing of dangerous machinery, regulation of processes injurious to health, and so on. The general attitude towards such legislation now, is that a minimum standard of decent conditions must be laid down, in order to bring the lax or recalcitrant employer up to the lowest level that public opinion permits: the workpeople may be able to bargain for something better, and the intelligent employer will usually offer better conditions than the law requires, in his own interest and also from humanitarian motives.

The evolution of economic type has not stopped at the small factory of the early nineteenth century. Such factories are still found in large numbers, just as even earlier forms survive; but are not representative at the present day. The advantages of specialization, and of the use of machinery which led to the factory, have been carried to a much greater length, so that factories are now found employing ten thousand and more workmen, and possessing a much more elaborate organization for superintendence than formerly. Before attempting

to describe this type, reference must be made to a legal condition which has made it possible.

Until 1856 the only forms of ownership available for a business were the individual and the private partnership. Larger bodies had been organized in Britain, but usually under special Acts of Parliament; it was in that way that the Bank of England and the Hudson Bay Company were formed, but it would not have been practicable to get their privileges for an ordinary business. In a partnership each partner is responsible for all the debts of the firm, so that if the business fails he may quite possibly be ruined. In these circumstances few people are so rash as to take a share in a business with which they are not personally familiar, and it is impossible to bring more than a few together in one enterprise. Large aggregations of capital are impossible, and businesses needing millions, which are fairly common nowadays, could only be organized by a group of the wealthiest men. The law of limited liability, which is now found all over the world, has remedied that: it limits the liability of the shareholder to the amount for which he subscribes, and consequently allows thousands of people to take a part, larger or smaller according to their means, in enterprises about which they know little, and to which they need not give personal attention. The company form of ownership has now become very common in manufacturing as in other kinds of business: nearly all large factories belong to limited companies, as well as many small ones.

5

Manufacturing : Contemporary Organization

Manufacturing organization. Machinery and growth in scale. Company form. Departments : works, engineering, buying, selling, secretarial, accounting, employment, welfare, research.

The division of labour which helped to cause the success of the factories of the eighteenth century, and which so much impressed Adam Smith, was a division of manual processes only. Even greater economies have been effected by division of mental labour, which is rendered possible by working on a very large scale : the single owner of a small factory who has to be engineer, accountant, and buyer by turns can rarely do his work so efficiently as a staff of specialists. This, together with the use of machinery are the chief reasons for economy of production on a large scale : the use of machinery is limited not so much by its cost as by the amount of work available for it. Even if the small factory could raise enough capital to buy a certain machine it might only have enough work to keep the machine busy for a short time every day, and then the machine would not pay for itself. By working on a very large scale every detail of a process may be dealt with by suitable machinery in correctly proportional amounts.

When it is possible to reduce a piece of hand-making to a series of machine operations the gain in speed is not a matter of two- or three-fold but is extraordinary. Take such an instance as box-making : many factories require boxes, of uniform size, in thousands, to send away their produce, and will lay down a plant for the purpose. Wood arrives from the timber-merchant cut into boards of the size required ; a board is placed in the first

machine, and a steel cutter, with a single stroke, cuts the whole set of mortices needed for the board to fit into the adjacent sides of the box. Five pieces so cut are then placed in a second machine which gently but firmly pushes them together, to form the bottom and sides of the box. The construction is finished in a third machine which pushes nails in, where a carpenter would hammer them, but the whole set at one stroke. Thus, in a few seconds we have the complete box which it would have taken a carpenter an hour or so to make.

The amount of machinery needed in different processes varies greatly. Thus, it is possible to equip a shoe-factory fairly completely for £10,000, but £1,000,000 is not enough to provide a steel-rolling mill with all the plant needed for economical working. Consequently there are shoe-factories of very moderate size which compete effectively with the largest, but this is not the case with rolling-mills. In the shoe-factory, however, advantages due to organization of staff would tend to carry the scale of operation beyond what is necessary to admit of machinery.

In the company form of business, whether for manufacturing or otherwise, the supreme control lies with the body of ordinary shareholders. But as they are usually very numerous, scattered, and without knowledge of the business, they delegate their authority to a board of directors elected at annual meetings: the board is the real focus of the company's activity. The directors are not necessarily experts at the particular kind of work undertaken, though sometimes they are chosen for that reason. More often they possess merely general experience of affairs. The board meets at frequent intervals and decides on all the more important questions that arise, and handles a good deal of detail: only in fundamental matters is reference made to the general body of shareholders. The members do not give more than a small part of their time to the company's

affairs, but the chairman, or one of the board specially designated as managing-director, usually attends every day.

In a manufacturing company the board appoints a general manager and probably his leading subordinates (unless one of the directors undertakes his functions). These are of course all full-time officers, engaged at a salary, with possibly a supplement depending on the degree of prosperity of the business. In a large factory the duty of the general manager is chiefly to superintend and co-ordinate the work of the various departmental heads, upon whom much responsibility falls.

We may take first the position of works-manager. His function is to supervise the actual process of manufacture. The raw material has to pass through a number of consecutive processes, and for efficiency it is essential that these should dovetail into each other smoothly. If one of them is carried on more rapidly than the one that precedes it the workmen engaged on it will be idle for a part of their time, waiting for material to be handed on to them : hence the works-manager, or a ' progress-manager ' under him, must adjust both the quantity of labour-power and the machines available so that at each stage they can deal with the same quantity of output. Further, much time and labour can be saved if, when the work passes from one group of workmen to another, the transport involved is short and convenient. The works-manager must therefore consider the lay-out of the factory, and would no doubt be consulted as to its arrangement in the first place. He comes more directly into contact with the workmen than the other heads, and he probably appoints foremen ; his success will depend even more on his tactful handling of men than on his technical skill.

In a small factory the works-manager may be in charge of the machinery, but it is better if a mechanical engineer is appointed, to devote his whole time to seeing that the numerous machines

are kept in perfect running order. He should have a repair workshop and a staff of mechanics at his disposal, because much time is wasted if small repairs have to be sent elsewhere—even to another firm in the same town—to be effected. For large replacements it will no doubt be necessary to go to a firm of machinery makers, but this work can usually be foreseen and arranged for in such a way as to minimize the loss of working-time to the factory.

The business of buying the raw material and other requirements of the factory is one that fully justifies a separate department. Indeed, the function of buyer is one whose influence is sometimes greater in promoting the success or failure of the whole enterprise than the internal organization. As things are, the largest opportunities for profit inure to commercial rather than to manufacturing skill, and a manufacturing business has to undertake commercial risks, at least on the side of buying materials. To be familiar with all the qualities of the raw materials used, with the sources of supply and the course of prices, and to use good judgement in deciding when and where to buy is, in any case, work enough for an expert; in fact, manufacturing companies do devote some of the best ability available to this side of their activity.

Selling the manufactured product to advantage is of equal importance, but here the practice of companies varies. Some of them do not attempt the commercial side of the business, but confine themselves to supplying the orders of merchants which come to them. They usually keep a certain amount of their product in stock, and if orders are slack can keep the factory busy by making for stock, to a limited extent; but in prosperous times they have a succession of unfilled orders in hand. This is the attitude of most manufacturers of goods that are needed only by other businesses, as well as many of those who manufac-

ture for the public; however, many others who make goods that the ultimate consumer needs and can judge of have developed a system of merchanting of their own. Examples will occur to every reader of goods that are advertised extensively, so as to make the public familiar with the names and trademarks of the makers. For instance, the names of certain makers of hosiery are well known, whilst the purchaser of a suit of clothes is quite ignorant of where the cloth comes from. When a manufacturing company undertakes the disposal of its goods the selling and advertising department may become large and involve heavy expenditure.

Besides the secretarial department, whose uses are obvious, the modern factory needs a well-organized accounting department. This work used to be done in a rough-and-ready way, but accounting has grown in recent times to be a profession; careful accounting is needed in order that the directors of the enterprise may know what is happening, and the expenditure involved more than pays for itself. There is as much difference between the information-service by the accounting and statistical branch of a large modern business and the book-keeping of a manufacturer of a century ago, as between the elaborate set of scientific instruments carried by an airship, and the rough chart and compass of a sailing-ship of Elizabethan times. In particular 'cost-accounting' is regarded as important: this means determining the cost at the works of each type of article produced. A business may be making a profit on some things and a loss on others: merely to know that the profits exceed the losses on the whole is unsatisfactory. The directors need to know in what direction it would be advantageous to expand the business and in what others, possibly, it may be well to withdraw; and further, to check the efficiency of the various operations. Such guidance can only be supplied by cost-accounting,

which is therefore worth while, though it involves a minute record of the material used and work done throughout the factory. Records extend not only to prices but to quantities dealt in, and it is becoming customary for the firms in an industry to pool their information, so as to render possible accurate knowledge of the position of the industry as a whole : this is of great assistance to the heads of an enterprise in directing their policy.

When a factory employs thousands of men it is obviously impossible for the general manager to know them personally, as the small employer did and does. Need arises for a department specially concerned with engaging labour and making appointments. In some factories there is a constant coming and going of employees : in others the men are contented and settle down, often for life. The ' labour turnover ' is thus a measure of the good management of the factory, and it is the aim of the employment-manager to make the turnover as small as may be : the gain in keeping workpeople so that they become familiar with the business and interested in it is as great for the employers as the gain in contentment to the employees. Considerable assistance in this has been obtained lately by what is known as ' industrial psychology ' : this is an application of the methods of psychological science to find out the aptitudes of boys and girls entering industry. So much success has been attained in fitting the right person to the job that some businesses pay large subscriptions to an institute of industrial psychology in return for its services.

The importance of securing the goodwill of the staff is not even now appreciated by the average employer as highly as it should be, but public opinion is very different from what it was. A century ago the outburst of new inventions, which had caused the Industrial Revolution, filled people's minds : the scramble

for increased production and the fortunes to be made by it left no thought for social consequences. Industry has since become more orderly, and care for public welfare has reasserted itself.

When small privately owned factories were the rule, industrial relations were on the whole not good, but there was still a human touch about them : in a gigantic establishment belonging to a company with ' neither a soul to be lost nor a body to be kicked ' this was lost, and something had to be put in to replace the personal acquaintanceship of capitalist and labourer. The ' welfare department ' of the modern factory is a response to this need. Concern for the general welfare of employees was at first purely humanitarian, and certain firms have been honourably distinguished for their efforts in that way : notably, in England two or three cocoa manufacturers, whose leaders are members of the Society of Friends, and in Germany the glass manufacturers, Schott & Co. of Jena.

The good relations established by such unselfish efforts were, however, found to have such a favourable reaction on the financial position of the business that it has become an accepted maxim among intelligent employers, especially in America, that it pays to provide high wages and pleasant conditions of work. The influence of this idea is seen not only within the factory, as e.g. in providing a comfortable and economical restaurant, but in arranging clubs, sports-grounds, libraries, and other amenities, and even in building attractive houses for the employees in a convenient situation. The duties of the welfare-manager go beyond this, as it is his part to make acquaintance, as far as possible, with the workpeople, listen to their complaints, and acquire their point of view : this is especially useful with women workers, who are more sensitive to being treated in a human fashion than to being given material benefits.

In some of the very largest factories a special department is

devoted to investigations on the improvement of processes. This is very expensive, but willingness to undertake it may be regarded as an indication of intelligence in the control of industry. The days of empirical invention are passing; not only are there whole branches of production which are the pure creation of science—all the electro-technical industries, and the manufacture of fine chemicals—but even in branches of traditional origin such as weaving or tanning, progress is now dependent on exact and continuous scientific study. In this matter the Germans, as might be expected, have led. They have devoted large resources to technical study, with a foresight and imagination that does not look for immediate return, but slowly establishes a superiority of production which, in the end, shows the investment to be one of the best that could be made. It is in this way that German firms introduced improved field-glasses and metallic filament lamps, to mention two familiar instances.

As research is a heavy tax on even the largest business, industries now sometimes unite to promote it. Thus, the Lancashire cotton manufacturers have now formed an association to maintain an institute for research in cotton-growing and working, and to share in the results obtained. This, like the pooling of statistical information, is evidence of growth in organization even beyond the stage of the great factory.

6

Manufacturing : Social Relations

Manufacturing : geographical distribution : earnings : trade unionism : methods of wage payment.
Causes of national predominance in manufacturing.

Next to agriculture manufacturing is the most important of human occupations. It is difficult to say what fraction of the earth's inhabitants make their living by it, as in the more primitive nations it is quite overshadowed by agriculture, but in the leading countries the two engage about equal numbers, and the tendency is for manufacturing to grow in relative importance. In Great Britain now, hardly a tenth of the people live by farming, and more than half by manufacture, but Britain is far from self-contained : it buys a large part of its food by exporting manufactured goods.

It is manufacturing that has created most of the towns : the largest cities, it is true, are primarily commercial centres, though their population is swollen by the presence of manufacturers too. This urban character has been accentuated by the use of steam-power, which has made urban industrial districts grow where coal is cheap ; there is now a certain tendency to decentralization, as electric-power distribution is spreading over the whole country. There are certainly advantages other than cheap power in being near a considerable town ; it facilitates the supply of labour, among other things. But the most important points for a manufacturer are cheap power and good transport. The latter can be secured by a site adjoining either a railway or navigable water, and as there is a large choice of such sites, it is advantageous to avoid the great expense of

urban land, and move somewhat away from the towns. This is the more important as it is now realized that factories should be well laid out, airy, and spacious. We may therefore expect, in future, to see industrial districts occupying a much larger area than in the nineteenth century, in outer suburbs and satellite towns of great cities, along main railways, rivers, and near harbours. Fortunately this will give the opportunity of designing them better than in the past, and avoiding the depressing conditions of factory life to some extent.

Earnings in manufacturing are on the whole higher than in farming, and despite the difficulty of comparing the value of an income in the country with one in a town it seems safe to say that the manufacturing population are better off in real comfort. In England there is a class of farm labourer who is paid weekly wages, so a comparison of incomes is possible, and it is found that while farm labourers get a little more than 30*s*. a week, town wages are mostly from 50*s*. to 70*s*. On the continent of Europe wages in industry are lower ; the majority of the farming population are independent workers whose incomes are not so exactly known, but the opinion of agricultural authorities is that they are poorer than the English farm labourer as a rule, so that the disproportion between town and country exists there too.

The factory has been the home of trade unionism. In mining this movement has tended to extremes, in agriculture it is difficult to organize ; but the unions of factory workers have accomplished much in raising the status of workpeople generally, and in enabling them to bargain on equal terms with employers. Factory legislation has guaranteed a certain minimum as to conditions and hours of labour, but for progress beyond that workpeople have had to depend mainly on their own collective effort. Organization has now developed so far, on both sides,

that it is a normal incident for national representatives of capital and labour in an industry to meet and discuss their common affairs ;—it is becoming customary to elect permanent committees to settle amicably differences that may arise. Such relations imply far-reaching changes from the period in which the workman had no relations except with the small factory owner for whom he worked : it is a change from the condition of master and servant to that of a commercial bargain between two parties of approximately equal education as well as financial strength.

The methods according to which wages are paid have been the subject of much discussion. The two chief methods are by time and by piece. The former is the simpler ; if a workman is engaged at so much per hour, day, or week, it is only necessary to record his attendances to find how much he is entitled to. On the other hand, it is necessary to exercise close supervision to see that he does not waste time, and it is not easy to discriminate between good and indifferent employees. There is a tendency for all to be engaged at the same rate, viz. : the minimum agreed on with the trade union. The plan does not encourage a high degree of efficiency, but it is the usual practice in England, the trade unions there being strongly against piece-rates.

Payment in accordance with the amount of work done is practicable when the work is simple and uniform, but there are many occupations in which a measure of the work cannot be arrived at. Even when practicable a great deal of detailed estimation is required and has to be agreed on between employer and employees. When piece-rates can be used they present some important advantages. Workmen do not need to be supervised, except to see that the quality of the work is up to standard, and the good workman automatically gets higher

wages. There is indeed the risk that he may work too hard for his health, and some British unions have made that the ground of their opposition. The middle-class public judging by such building operations as they see, and work of isolated men like plumbers and electricians, are inclined to smile at this alleged danger, but it takes a more serious aspect in factories where workpeople have to keep up with machinery, and with the pace set by the organization of the whole establishment.

There is another practical objection to piece-rates. It has been found in a good many cases that an employer after agreeing to a certain rate finds his workmen making larger incomes than he anticipated and cuts the rate, or, more probably, takes advantage of some slight change in process to introduce a new piece-rate that is unfairly reduced by comparison with the old. But trade unions should be strong enough now to resist such practices; and it is noteworthy that in the cotton industry, which is on the whole the most successful manufacturing effort of the British people, piece-rates have long prevailed. It is much to be wished that trade union prejudices against piece-rate payment should be thoroughly examined, for this method of payment increases output, i.e. the wealth of the community. Piece-rates are much commoner in the United States than in Britain, and the greater prosperity in the States is partly due to the system.

Ingenuity has been exercised in designing combinations of the two plans in order to overcome defects. For these reference must be made to special books. Systems that encourage workmen to make good wages are usually advantageous also to the employer, for if the output is high his fixed plant is being well utilized, and supplementary costs are low in proportion to the output. In fact, the whole community has so much to gain by increased output that every effort should be made to

encourage it, both in efficient organization of factories and in ungrudging opportunity for workpeople to make large earnings. The experience of the war is still an example to ordinary times: the manufacture of munitions was so speeded up by goodwill on both sides that it was common for novices to earn much more than skilled mechanics had been paid previously.

Most countries have shown a desire to expand their manufacturing industries at the expense of farming. This can hardly be attributed to an anticipated improvement in the condition of their working classes, for it is only of late years and in the advanced centres of industry that the status of factory workers appears attractive by the side of that of the country folk. The motive is probably a political one depending on the aggregation of wealth due to successful manufacturing. At first, after the Industrial Revolution started in Great Britain, that country held an unquestioned pre-eminence—it is interesting to read how, in the middle of the nineteenth century, even in the United States it was regarded as an almost hopeless task to start factories in competition with England's established industries. Later on, although British manufacturing continued to expand, Germany and the United States attained a position of equality, being more successful than Britain in some lines, less in others, but each country taking a large share in the world's trade.

These same three countries, however (together with France, which has followed a more conservative path), lead the world in wealth, in military power, and in influence: it is perhaps natural that other countries should attribute this largely to manufacturing, and should wish to share in the predominance it appears to convey. Practically all countries have adopted a tariff policy intended to stimulate manufactures; this makes

it all the more interesting to examine the grounds on which success in manufacturing is based.

Manufacturing may be classified into local and that for the world-market. Some occupations such as furniture-making, dress-making, preparation of locally grown foodstuffs exist in all countries ; they are carried on very largely by the older forms, i.e. in small factories and workshops and even by individual workers. The other group includes such instances as the spinning and weaving of cotton-cloth, which has made Lancashire celebrated, the production of dye-stuffs in the great factories of Germany, the manufacture of steel and of machinery. These operations tend more and more to concentration in modern factories of the largest size : it is in them that the most marked economies result from the scale of working. The tendency to growth in scale may, in fact, go so far as to result in monopoly, and even if a single business cannot, as a rule, secure a real monopoly, the small number of businesses in a given class of production makes it easy to arrange cartels and understandings with a view to limiting competition and raising prices. This tendency is not restricted by political frontiers ; given free play it would lead to concentration of manufacturing into those countries which are best suited for it, and that means, as a rule, those in which it is already most strongly established.

Most other countries try to oppose this movement by placing customs duties on imported manufactures. This results in some manufacturing that would have been done in the large centres being transferred to the country in question : but it does not create an export industry there, for the location of great industrial centres is not accidental—it is not possible to transfer them arbitrarily. The factors that go to make such a centre may be classed under the heads of natural resources,

transport facilities, power, and acquired skill: consider the influence of each of these.

Manufacturing is often located where the raw materials lie, especially when these are heavy or bulky: for example, pig-iron is smelted where iron-ore and coal are available near together or at a point conveniently accessible to supplies of both; cane-sugar is extracted close to where the cane is grown. But as we pass to higher stages of manufacture the importance of this location becomes less: thus, steel may be made and rolled in works alongside the furnaces that produce the pig-iron, but it often happens that the iron is sent elsewhere to be worked up; and the still further stage of machinery-making is less tied to the spot where iron-ore is found. The fact is, carriage of the raw material to the factory should not be considered alone; it is part of the wider problem of transport from the sources of raw material to the final consumers. The most favourable location, from the point of view of transport alone, is that which minimizes the total amount of carriage involved; it may be more convenient to collect the raw material from various sources to a central point and make it up there, because the same point is well placed for distribution to consumers.

Although cheap power has been noted as one of the essentials of manufacturing it need not be taken much into account as between different countries: coal-deposits, oil- and water-power are so widely diffused that few countries would be excluded for want of them, though the location of factories within the country may be largely influenced by convenience in obtaining power. Broad geographical influences are more important in the present argument, and it will be noted that the great manufacturing districts—Great Britain, the Rhine Valley, the hinterland of New York—are all exceptionally favoured as regards transport from and to large regions of the earth's surface.

The remaining factor, that of enterprise and skill, though not strictly permanent like the geographical factors, is yet very durable. National and local characteristics of occupation are not easily modified : some peoples prefer agriculture, others are skilled in handicrafts, others take to the sea. It is a mistake to suppose that the introduction of machine-processes makes these distinctions unimportant, for the ability to manage machinery is as much a special faculty as the others. The mechanical sense, the thoroughness, and the relatively good education of the British workman are among the strongest forces retaining manufacturing superiority in Great Britain at the present time, and although countries not at present distinguished for manufacturing may make progress in these respects, the British population does not stand still either. Similarly, the enterprise of the Americans, the scientific method of the Germans, and the craftsmanship of the French form strong entrenchments for manufacturing success which, combined with favourable geographical features, are likely to withstand attacks. We may conclude therefore that the efforts of nations to stimulate manufactures by protective policy are likely to have a very moderate degree of success ; their effect is chiefly to establish small factories for local supply rather than to reproduce the aggregation of industrial wealth and power which makes the leading countries envied. It has, in fact, become a settled policy on the part of large manufacturing businesses to found branches in various countries to take advantage of local customs tariffs : but the control and the chief benefits remain with the central business.

7

Transport: Ships

Ships: importance of cheap transport. Liners and tramps. Trade routes. Return freights. Shipping conferences. Road transport. Air transport.

IMPROVEMENT in transport is the key to the industry and even to the civilization of the modern world. Earlier cultures were narrowly limited in area, and if, like the empire of Alexander, they grew large, they soon fell to pieces from the difficulty of communication between the parts. The modern system is dependent on rapidity in travel and the transmission of messages, together with the easy transport of goods. It is the latter that we must consider especially: agriculture has been transformed because it is now possible to send its products to markets far away, and the great organizations for manufacturing are only possible because they have a wide market in which to sell the output of their factories. All this depends on cheapness of transport. In the Middle Ages carriage of goods—on pack-horses—was so dear that commerce was restricted to a few articles of luxury: at that time there might be a famine in one part of the country and abundant crops two hundred miles away, but means to carry the surplus to the place of need were lacking. Now, wheat can be brought from the interior of Argentina, shipped six thousand miles, and sent to an inland town in Britain to compete on equal terms with wheat grown in the neighbourhood, and even coal is sent half-way across the earth.

Transport has always been cheaper by water than by land. It was so probably when small ships driven by oars were used

to follow routes that hardly ventured to lose sight of the coast, for at that time there were no roads, and land-transport had to depend on pack-animals. The invention of wheeled vehicles led to the construction of roads and the facilitation of land-carriage, but at sea the use of sails and the compass made a corresponding advance. Railways are far more efficient than animal-drawn vehicles, but steamships were introduced about the same time as trains, and maintained the superiority of the water. Consequently the great trade routes are by sea, and they determine the position of the leading cities. Athens, in its day, was the creation of maritime traffic, although then practically limited to the Eastern Mediterranean: Venice in the Middle Ages owed its greatness to control of the routes to the East: in more modern times Lisbon, Amsterdam, London, and New York have in turn grown to importance for the same geographical reason.

As a rough measure of the cost of different methods of transport the following figures may be given, the unit of work done being in each case the carrying of a ton of goods for a distance of one mile. An ox-wagon, suitable for travelling on very rough roads, or even over grassy country with no road at all, costs about threepence per ton-mile, the oxen being assumed to live on the country. Railway-transport in favourable circumstances can be done at a halfpenny per ton-mile, or even somewhat less. Sea-transport is commonly as low as a tenth of a penny per ton-mile, and sometimes a good deal less than that on long journeys; in fact 400 pence is an ordinary freight for a ton of corn carried distances of ten thousand miles or thereabouts. Accordingly, the bulk of heavy and long-distance traffic goes by water. If it is possible to reach an inland point by more than one route, a small saving in the distance by rail will compensate for a considerable increase in the distance by

sea, so that the traffic, unless speed is important, very often does not follow the shortest route. For instance, goods sent from the Rhine valley to the Orient usually start in precisely the opposite direction, in order to reach Antwerp, Rotterdam, or Hamburg, instead of going to a Mediterranean port which is on the direct line, but farther off by rail.

Ships may be classed into liners and tramps. The former travel over prearranged routes according to a time-table, like railway trains. They include nearly all passenger-ships, since in the case of passenger-traffic it is essential to give prompt and punctual service; but a great deal of freight-traffic also goes by liners, and some liners are devoted entirely to freight. Passenger-traffic is of secondary importance, and cannot be made to pay by itself, for it leaves the lower portions of the ship un-utilized. Hence, no ships are devoted to passenger- and mail-service only, except a few fast ferry-boats such as those across the English Channel, or from Brindisi to Port Said.

Freight by liners is necessarily more expensive than by tramp-steamers because the liner has to start whether it has a full cargo or not. It is worth paying for, however, in the case of certain classes of goods of relatively high value. Besides bullion and mails there is fruit, which deteriorates on a long voyage, fashionable clothing, and expensive manufactured articles on which the freight is unimportant but of which regular supplies are demanded.

The other ships are called tramps because they wander anywhere about the world as they are needed. Such a boat may take a cargo of machinery from England to South Africa, pick up coal there, or take it to India, proceed to Java and load up with sugar to take back to England via the Suez Canal; or follow a much more complicated track if the cargo available suggests it. Nowadays its movements will be directed by

telegraph from its owner's head-quarters. Merchants sometimes charter the entire ship for a given voyage, or the owner may act as a common carrier and accept any freight that offers. The business is highly competitive ; the rates are a matter of bargaining, and those for important routes are quoted daily in the markets in London and Liverpool, like the prices of standard goods.

Certain sea-routes tend to be marked out by the magnitude of the traffic available along them ; where there is a good flow in both directions between two ports, operation of boats to and fro is economical, but where this is not the case boats will often go out by one route and return by another, the object always being to keep the vessel well filled with paying traffic. The question of return freight is, in fact, one of the most important affecting rates : if there were none available the shippers of the cargo in one direction would have to pay a price high enough to cover the return of the ship as well. For this reason a country in a central position, with much sea-traffic, gets its transportation done cheaply. The case of England is worth noting : the value of her exports has, approximately, to equal that of the imports they pay for, but the exports are high-class manufactured goods, occupying little space, while the imports, consisting mainly of wheat, meat, and raw materials, are bulky. Hence, ships arriving in England would have to go away nearly empty were it not for the export of coal, which fits most conveniently into the scheme. Cheap return freights on British coal give it an advantage in foreign ports as compared with coal from most other sources, and so form an important economic factor in maintaining the British coal industry.

Cargo taken by liners is mostly paid for according to a prearranged schedule of rates, though of course the schedule must not be out of harmony with the competitive rates quoted for

tramp-steamers. Liner-traffic tends more and more towards monopolistic conditions, for the liner companies are few in number, and they easily make arrangements (at so-called 'conferences') among themselves. These shipping conferences, which transcend the limits of a single country, have come to occupy a very strong position, and there has been much complaint of the pressure they exercise on shippers. A favourite method is that of deferred rebates: the steamship company will grant rebates to merchants who do business with them, but the rebate is only paid after a considerable delay, and on condition that the merchant has remained 'loyal' to the company (or to the conference), i.e. has not taken advantage of cheaper freight by a competing ship. But though liner-traffic has grown in magnitude of late years the bulk of transportation by sea—of corn, coal, oil, raw cotton, wool, &c.—is still a matter of free competition.

Seaports need docks, quays, warehouses, and facilities for handling traffic, especially for transferring goods between ships and trains. A port gains greatly in convenience if the harbour is such as to allow large ships to moor alongside a quay in order to load and unload directly. There are few harbours in which the very largest ships can do so, and the most important traffic-routes are conditioned in this way. Large ships are more economical to run than small ones, but such gigantic liners as now ply across the North Atlantic are restricted to a few ports like Southampton and New York which have the necessary accommodation. A good many harbours exist where an ordinary tramp can come alongside, but at minor ports ships have to lie at some distance from the shore, and goods are taken to them by barges; this adds to the expense of transport, though it must be remembered that harbour-works are very expensive, so that a good equipment of quays is only justified where there

is much traffic. Warehouses are always needed, so that goods may be stored without detaining railway wagons or ships, and keeping them from their proper purpose of transport ; and the usefulness of the port depends on having efficient cranes and other mechanism for transferring cargo and coal rapidly and cheaply.

Transport by road has revived since the introduction of motor-cars and the improved road construction which has been adopted to facilitate the use of cars, so that now a good deal of traffic, especially for short distances, that used to go by train goes by road ; an important saving in cost of loading and unloading results. But the fundamental economic condition of road-transport is like that of water—and unlike that of rail-transport : the track is provided in advance. True it is not provided free, like the sea ; but the capital cost does not fall on the transport enterprise. Any one who possesses a vehicle may use the road, and whatever he may have to contribute to the cost of upkeep takes the form of a toll, or a periodic licence, or other current charge, comparable to harbour-dues paid by ships and tolls for the use of a canal or navigable river. In these circumstances competition is natural.

Air-traffic is still too new for its commercial aspects to have been thoroughly explored, but it is easy to see that its fundamental condition is the same as that of maritime transport. The air, like the ocean, is provided free, and the only charges will be for the use of air-ports ; hence competition may be expected to prevail.

8

Transport: Railways

Railways: tendency to monopoly. State-railways. Regulation of private lines. Statistics. Problem of rate-making. Other wayleave industries. Types of organization.

Railways are in complete contrast with the modes of transport discussed in the foregoing chapter, because they must have a continuous track of their own. Two important points are involved in this: the track needs a huge capital outlay, and also state authorization. The interference of the state is inevitable, as in the absence of compulsory powers of purchase a single landowner could hold up the entire scheme. In many countries the state itself constructs the railways, and in others where they are private property the fact that authority is required to obtain the track is rightly regarded as giving the state some claims to regulate the business. This claim is greatly strengthened by the natural tendency of railways towards monopoly.

It is the large capital needed to which this tendency is due in the first place. Not only is the cost per mile considerable, but the longer lines, constituting the main communications of a country, are the most essential, so that several millions sterling are usually involved in establishing a railway. There are other businesses needing a capital running into millions which do not show so strong a tendency to monopoly: the capital of railways is not only large in itself, but large relatively to the revenue of the business. In manufacturing, the outlay needed on plant and buildings may represent six months' or a year's gross receipts from the sale of the ouput, possibly two years':

in a railway the capital outlay may be as much as six or eight times the annual receipts. Accordingly, the interest on capital is so serious a matter that it is very rarely possible to start a new railway in competition with an existing line; indeed, there are many places where to get a railway at all investors have to be encouraged by a government guarantee or by a grant of government land, or else the government itself has to undertake the work. The carrying capacity of a railway, once made, is so great that only in a few of the most densely inhabited spots of the earth is there enough traffic to justify two rival lines.

Further, the technical conditions of railway work make for monopoly. When railways were first made in England parliament, in authorizing construction, supposed that private persons and companies would be able to send trucks along them, as on a road, merely paying a toll to the railway company for the use of the line. It was hoped that competition would be kept effective in this way. It was soon found that this was impossible, and that all the traffic must be in the hands of the railway company itself. Further experience has shown that the economies of working on a large scale are particularly evident in the case of railways, so that where, as in England, there were at first numerous small lines the companies soon sought to amalgamate. Parliament was at one time hostile to this, but by now the idea of relying on competition has been abandoned, and protection for the public is sought in other ways. The latest stage of amalgamation in Great Britain was taken in 1922 when nearly all the railways were transferred to four huge companies: so that we find a body of workers equal to the working population of a small state, and assisted by capital amounting to hundreds of millions of pounds, under a single board of directors.

Railways being of the first necessity in the life of the com-

munity, both for passenger travel and the transport of goods, and being so peculiarly liable to monopolization, the problem of securing the rights of the public has demanded the most careful thought. In some countries the lines were constructed by government from the beginning : more often the first enterprise was private, but subsequently government has stepped in and bought out the railway shareholders. In either case the problem of efficient management of a business undertaking by the state arises. There are two very serious drawbacks to state ownership. First, the management is usually inferior to that of private companies ; the administrative heads have not the same personal interest in success, and even if this be adequately replaced by public spirit they are always hampered by officialism, and not allowed to use their judgement as promptly and independently as in private enterprises. Among the rank and file discipline is usually not good, there being always a tendency to regard the undertaking as a convenient means of providing for friends and favourites at the public expense.

The other drawback is even more serious : it is the tendency to use political pressure to get railways made in places where the traffic does not justify them, and to get abnormally cheap rates for the advantage of particular places or industries. The history of state railways is one of constant attempts to secure a form of administration that will avoid these defects. There have been some marked successes, particularly where there is a tradition of honourable and intelligent work in the civil service, but the problem is by no means solved. It has been acute in the British colonies, and the most promising method tried is to place the railways under a board as free as possible from party politics and independent of the government of the day ; the members of the board are paid high salaries and given security of office for a number of years in the hope of securing

able and impartial men. Even in this case, when a vacancy in the board occurs it has to be filled by the government, and new lines have to be authorized by parliament which votes the money for their construction. The method has had some success in promoting honest and businesslike administration; but it depends ultimately on the degree of public spirit and intelligence prevailing among the electorate.

When the railways are left in private hands the government exercises some form of control, especially as to the maximum rates and fares that may be charged. The principal countries in which railways do not belong to the state are Great Britain and the United States. In both there is a government commission charged with the supervision of the railway companies. At first the control exercised was of a loose and general character, but it is difficult to know where to stop in such a matter: circumstances drive the state into more and more detailed interference till the position of the railway shareholders is not very different from what it would be if they had lent money to the state to construct the lines. There is some initiative left to the companies, it is true, and the management is usually more enterprising and efficient than that of state-owned railways: but the shareholders have not much profit to look for from successful management. Consequently there is little prospect of any large new undertaking by private capital. In Britain additional railways are, with trifling exceptions, not needed: in the United States, though the number of miles of lines bears a much smaller proportion to the area of the country, railway building has practically ceased, improvement of roads taking its place. In other countries, where there is more scope for new lines, they are mostly financed by government.

The question of how the capital for railways is to be provided will become clearer if the accounts of a railway be examined,

and for this purpose we may take the summary of the finance of the whole group of companies (excluding small local lines) in the United States, as published by the Interstate Commerce Commission, since the American statistics are very full. The length of track in 1923 was 262,000 miles, and the number of employees of all grades 1,858,000 (this is four per cent. of the total occupied population).

An income and expenditure account is given below: it should be explained that 'traffic' expenditure means the cost of the general commercial organization, advertising, &c., needed to get business; 'transportation' the actual cost of carrying on the work of the railway. Maintenance, which is a large item, is divided into that of the permanent way, building, &c.—a small percentage on a huge mass of capital—and that on the rolling stock and other portable goods, which do not represent such a large initial cost, but which wear out more quickly and cost more for upkeep.

U.S. RAILWAYS 1923 (in millions of dollars)

Revenue		Working Expenditure	
Passengers	1,161	Traffic	100
Goods	4,512	Transportation	2,316
Miscellaneous	583	Maintenance of way and works	850
		Maintenance of equipment	1,422
		Miscellaneous	210
		Total	4,898
		Balance	1,358
	6,256		6,256

It will be noticed how much more important goods traffic is than passenger. The ratios of working expenditure to revenue

(called ' operating ratio ') was 78·3 per cent. The appropriation of the net revenue was as follows :

Net Revenue	Expenditure	
1,358	Taxes . . .	349
	Rent of lines . .	93
	Interest on bonds . .	471
	Dividends on shares . .	347
	Betterment, sinking funds, &c. . . .	98
		1,358

The capital of the companies was $18,157,000,000, consisting of $10,479,000,000 in bonds and $7,677,000,000 in shares. The average rate of interest paid on bonds was 4·50 per cent. The average dividend received by the shareholders was 4·53 per cent. Some companies pay more than this low rate, but others make no return to the shareholders at all, and it is certain that if it could have been known beforehand what dividends would be earned private investors would never have put their money into railway construction in the United States, except in a few favoured localities. In England the situation is the same : dividends are so low that if the work had to be done over again investors would not take the risk, and the nation would have to construct its own railways through its government.

The central problem of railway finance and the most responsible duty of a railway management is rate making. The principles on which this should be done are complex. Where an industrial operation consists mainly in applying a certain amount of work to a certain amount of material it is fairly easy to estimate how much it costs, and to make a reasonable charge accordingly ; as industrial organization grows more complicated it is less and less easy to apply such a rule. ' Supplementary

costs', i.e. those costs which cannot be attributed to any particular item of production, play an important part, and railways are an extreme example of this. To find the cost of running a train it is not enough to estimate the cost of coal, wages, and wear and tear of the rolling stock. There is a whole staff of officials to be paid, who would have to be there whether that particular train is run or not, and before that there is the cost of building the railway. The immediate expenses of the train give nothing but a minimum price that must be charged for the use of it: they give no indication of how much higher the charge must be to contribute fairly towards making the whole railway pay.

The railway manager has to remember that he can probably run more trains than he does with the same track and equipment, and that the more business he does the less it will cost per ton-mile. Hence, he has a strong motive to try and get more traffic by charging as low rates as practicable: he regards a progressive policy as normal, and should expect to make good profits rather by increasing output than by high rates. When the railway is publicly owned it is usually laid down by law that it should charge enough to cover expenses, including interest on cost of construction, at the rate at which the money was borrowed, but no profits beyond that. It is, of course, impossible to hit off this condition exactly each year, but if it is found that the railway is making a substantial profit or loss as compared with that standard, rates are adjusted from time to time. The matter is not, in practice, very different when the railway belongs to a private company. If the company were left entirely to itself it might use its monopolistic position to make high dividends, but no country will permit a service of such fundamental importance to be exploited as a monopoly for private profit. As we saw, state regulation is pushed from

one stage to another: the position reached finally, both in England and America, is that rates are to be adjusted to such a level that a company with reasonably good management will earn a fair rate on its capital: and for the present, in the United States, a 'fair rate' has been interpreted as $5\frac{3}{4}$ per cent.

Thus, in all the leading railway systems the economic position is the same in essentials. The basis that has been reached may be described as the public-service principle; it is that the price of railway transportation should be as low as is consistent with the permanent welfare of the undertaking. Profits are not allowed to rise to an undue level, but they should not be cut down so low as to make it difficult to secure fresh capital for extension. The only prospect of further reduction in rates lies in the growth of the business and in the gradual improvement of technique. Any advantages there may be in nationalization are already secured by the public-service principle as adopted in the United States and Britain, for the only remaining gain would occur if management by the state proved more efficient than by a company, which is highly unlikely.

Certain other industries possess the same economic characteristics as railways, each of them needing a 'wayleave', i.e. a continuous track granted by authority. They are (i) tramways, which differ from railways only in using a track along the public road; (ii) supply of water, gas, and electric-power; (iii) telegraphs and telephones. Competition can only arise in any of these industries if two or more wayleaves are granted, and the amount of business to be done will rarely justify that. Further, the capital outlay in most cases is large compared with the annual revenue, and considerable economies are effected by enlarging the scale of working. Hence, it comes about that all of them are regarded as suitable objects of state enterprise; they are frequently owned either by a national or a local government,

and when carried on by private enterprise are closely regulated.

Electric-supply illustrates these points well, and as it is becoming of primary importance both in private life and in production it merits a short discussion. Although it is possible to generate electric-current privately, it is so inconvenient and expensive to do so that private stations never survive when public-supply is available. Further, it is fully recognized that stations producing a few hundred kilowatts have no chance in competing with large stations of 10,000 kilowatts and upwards : the latter are cheaper in first cost, in coal consumption, and in attendance. When electric-supply was introduced in Britain parliament was in a transitional state of mind ; on the one hand it tried to ensure competition by giving two companies the right to lay mains in each area, on the other it inserted provisions enabling the public authorities to buy out the companies after a term of years. The attempt to ensure competition failed as completely as with railways ; but the country was broken up into small areas, some served by a company and some by a municipality, and the unwillingness of the two classes of suppliers to unite has proved a hindrance. The progress of science has shown not only that small generating stations should be abandoned in favour of large ones, but that a whole country should be united by a ' grid ' of interconnecting cables. Economy is effected by keeping the machinery as fully occupied as possible, and to do this it must be possible for one station to give power to or take from another, as occasion may arise. Hence, the electric-power-supply over a large area such as England, is forced irresistibly into one organization. Private monopoly being excluded, the choice lies between complete nationalization and some application of the public-service principle, like that which has been developed in the evolution of railways. The plan that is coming

into favour is to establish a quasi-independent board, provided with capital by the state, to undertake such part of the work as relates to the whole area of the country, and to supervise the activities of the local generating and distributing stations, but not to extinguish local control of these, nor deprive the local authorities or companies of initiative.

9

Commerce

Commerce. Functions of the merchant. Wholesale and retail. Price agreements. Commercial morality. Expansion of markets. Produce exchanges: dealing in futures. Co-operative trading.

It has sometimes been attempted to discriminate between occupations that are productive and others that are not. It has been supposed that the farmer and the manufacturer really produce something, but that the trader, if not actually useless, does not deserve to be called a producer. The distinction is, however, really untenable: goods are not completed until they are in the hands of the consumer for whom they are finally meant, and all the services which are needed to get them there are equally useful, since they are all indispensable. The merchant contributes several services to the joint result. In the first place he arranges for the transport of goods from where they are made to where they are wanted. He does not actually carry them, that being the work of transportation agencies, such as railways and steamship companies, but he does a good deal of clerical and organizing work.

Next, he keeps goods until they are wanted. The technical phrase, 'carrying' stocks, is a good one, since there is much in common between the functions of carrying through space and through time. Carrying stocks involves spending money in buying them and waiting to be repaid later, i.e. it involves capital. Merchants must therefore have capital, and in fact, though they borrow freely from banks, they usually have a good deal of their own, since banks do not lend to persons without

means, except occasionally when they lose their heads in a trade boom.

There is another function, not so obvious, but of far more real consequence, that of guiding production. Nearly everything that is consumed is produced in advance: even if a suit of clothes is described as 'made to order', the cloth has been woven in advance of the order, and, much more, farmers do not wait to grow sheep until the tailor receives his instructions. But the future is uncertain, and it is therefore impossible sometimes not to make mistakes. Somebody has to take the responsibility of producing in anticipation, and stand the loss if a mistake is made. Even corn may be produced and not fully needed: it may happen that there is an abnormally abundant crop. Such articles as dresses in a new fashion are highly liable to turn out unwanted. The farmer cannot avoid shouldering some of the risk, and the manufacturer usually takes some, but the largest share falls on the merchant—more particularly the wholesaler—because he usually takes the initiative and orders from manufacturers what he thinks likely to be needed. Hence, he exercises the predominant influence in deciding what shall be produced. If he decides unwisely he finds that he cannot sell the goods he has stocked, or only at a bargain-price, and he loses: if he is correct in his anticipation of the public taste he makes large profits. Very great personal interest is enlisted in the decision, and merchanting therefore retains a strongly personal character.

Manufacturing has come to be prevailingly technical. In a typical great enterprise, the capital having been provided by shareholders, the work of producing goods is committed to a staff of experts who go about it somewhat as a public department goes about some function of administration. But the business of buying and selling cannot usually be done in this fashion; it

is true that mercantile businesses often take the form of limited companies, but as a rule the company-form is little more than a convenience to the individual large shareholder who controls and manages it. Success in buying and selling depends rather on an instinct, or flair, than on professional training, and those who have the gift make much money out of it. It may readily be conceded that merchanting is a service to the community, but it does not follow that the remuneration is in proportion to the service.

The leading distinction in the organization of commerce is into wholesale and retail. The latter is on the whole subordinate. The retailer does not take much responsibility; he is in immediate touch with the public, and so is the first to find out by direct experience what the public wants, but he does not keep large stocks, as he is able to get goods without delay from wholesale merchants. He does not even do much in the way of providing the capital needed: very often he obtains his stock on credit from wholesalers, and has but little capital of his own. Latterly there has been a movement in the direction of larger retail shops: companies with large capital have been organized to establish 'departmental stores', and also 'multiple shops', i.e. numerous small shops of the same kind; but the bulk of retailing is still done by shopkeepers working on their own responsibility, with businesses not larger in scale than the small farm or workshop.

Wholesale dealers fall into many groups: we may mention particularly (*a*) those who buy primary produce from farms and mines to sell to manufacturers, and (*b*) those who buy from manufacturers to sell to retailers. Group (*a*) also disposes of produce for export, and group (*b*) also imports manufactures in order to supply retailers: but foreign trade tends to be an occupation by itself. The actual passage of goods on the way to

or from manufacturing often involves a number of dealers, brokers, factors, &c. These ' middlemen ', as they are sometimes called, must not be regarded as an unnecessary complication, increasing the cost to the consumer. It is true that the cost of marketing is high, and could in many cases be reduced, but it is not high on account of the elaborateness of its organization : this arises spontaneously because specialization, as in other branches of industry, usually improves efficiency and so tends to reduce the cost of production. The cases in which a class of middlemen is really needless are few in number.

Manufacturers, we have seen, sometimes organize a selling department of their own, in order to appeal directly to the public and become relatively independent of merchants. But this is exceptional ; as a rule the responsibility and the profits of selling go to the merchant, who is a person of large capital resources. In addition, a large part of the capital resources of banks is placed at the disposal of wholesale trade. The business of the merchant being to hold stocks of goods, usually for some months, in a condition ready for sale, he has good security to offer for bank-loans, and he regularly employs this method of extending his transactions. His working expenses—chiefly for clerical labour and warehousing—are small, so that he is able to sell at a small percentage above his purchase price, but this makes the charge for bank-interest all the more important to him, and his operations are much influenced by the rate of interest ; a low rate encourages him to keep goods in stock and therefore to give orders to manufacturers.

Merchants naturally find it convenient to work where there is a good transport service, so that ports and railway-centres become the centres of commerce too, and owe much of their wealth to that fact. The predominance of the merchant in industry is an old tradition ; indeed, the great manufacturing

business is an upstart rival by comparison. Accordingly, we find that old and wealthy cities are primarily commercial. Manchester, for instance, is not a manufacturing town: it is the commercial centre of a manufacturing district, including Oldham, Blackburn, Bolton, &c.

As wholesale-merchants are a small class it is fairly easy to establish understanding and working agreements among them. The tradition of commerce is competitive it is true, but nowadays much has been learnt as to the advantage that any industrial group can obtain by combination. It has often been noticed of late that there seems to be common action among retailers as to the price of important articles even sometimes when there is no visible organization to back it. Retailers are, indeed, an amorphous body who would find it difficult to act together but for the impulse they get from wholesale-merchants, who are in a far stronger strategical position. Merchants commonly agree among themselves as to the terms and duration of credit they offer to retailers, a procedure which facilitates price agreements: indeed, when uniform prices are found to prevail in retail shops it is usually traceable to the merchants. Large business is not itself monopoly, but makes it easier to organize a monopoly and to obtain the resulting profits.

In commerce, perhaps more than in other branches of industry, the standard of honour plays an important part. Traders come more directly into contact with the public, and have more opportunity for fraud and sharp practice than most economic groups. The old maxim of Roman law warned the purchaser that it was his own business to see that he was not 'taken in'; but that does not fairly represent the position of modern commerce. Being such a highly personal occupation all grades of good and bad are found in it, from swindlers to houses with a century of honourable dealing to their credit:

taking a long view, it is businesses of high character that prosper, and they create a certain public opinion which safeguards outsiders against the less honourable. But there is only the loosest of organization, so that it is not possible to suppress the snatchers of hasty profit by illicit means. There are Chambers of Commerce and Associations of Merchants in particular trades, which among other activities try to do something for the protection of the public, but the world of private commerce is so anarchic that there is no real guarantee that a transaction will be straight, except the character of the persons concerned.

A market, in the primitive sense of the word, means a place where buyers and sellers come together: the primitive organization is still found in dealing with produce that will not keep, and therefore cannot be carried far, such as vegetables. Produce that can be kept for a long time, such as corn, but which could not bear the high cost of transport prevailing in former times, used to be dealt with in the same way at market-towns throughout the country, their range of influence extending, as a rule, to such distance as could easily be covered by horse-transport. Each market-town formed an independent centre, and prices might differ greatly between towns in the same country.

Since those times there has been so much progress, not only in speed of communication and in speed and cheapness of carriage, but in the art of preserving foodstuffs, that it has become possible to offer the same goods for sale, not merely in any town over a stretch of country, but in all the leading cities of the world. There was a time when, in Australia, mutton was almost given away, though, if it could have been brought to market in London it would have fetched a price tenfold as great: now the prices in the two countries are closely related. Even fruit and eggs are preserved in such a way as to admit of international trading. The market is, in these cases, said to be world-wide;

i.e. buyers and sellers come together—by letter and telegram—over any distance, and a single price holds, subject to differences due to cost of transport (and customs duties, if any). This unification of markets has proceeded furthest in staple commodities like wheat. The wheat-trade is so completely organized that the price throughout the commercially civilized world is regulated by that which is paid in the leading market-centres—London, Chicago, Buenos Ayres, Melbourne, and a few others—and the prices in the different centres are kept constantly in relation by dealers who are keenly on the look-out to buy at any centre of low price and send to another where there is a profit to be made over the cost of shipment.

In the case of important raw materials and foodstuffs that are not perishable, a large part of the supply actually passes through the markets localized at the chief centres. Thus, while most of the wheat grown is consumed in the same country, the export surplus, where it exists, is collected into larger and larger masses till it is handled by one of the great markets, where it is directed to one of the importing countries, to be bought up—still on a very large scale—by millers. In the United States the Chicago wheat-exchange is the organization which deals with most of the export wheat, but it does an even larger business in distributing wheat within the States themselves, since the country is so large that the business of supplying a dense population in one part with food grown in other parts partakes of the nature of international trade.

These organized produce exchanges, through which a large fraction of the supply passes at some stage or other, are of a highly specialized character. Each one is a society of specialist dealers, and only persons or firms of large financial resources, and who are able to give guarantees of maintaining the reputation of the exchange for trustworthy dealing, are admitted

to membership. All transactions on the exchange are done on the responsibility of members, and any one who defaulted on a contract would be deprived of membership. Thus, the selling of the largest amounts of produce is carried out under conditions that practically ensure it against default or bad debts, and so reduce to a minimum the cost of dealing.

Contracts on the exchange are not for the delivery of any particular parcels of produce, but of a specified amount of produce of a specified quality. This is rendered possible by a system of grading, which is a necessary subsidiary to a produce exchange: expert graders are appointed either by the committee of the exchange, or by government, whose business is to classify all consignments. In the warehouses associated with the exchange (in the case of corn, called ' elevators ') it is needless to keep apart different parcels of the same grade: the owner of produce deposited in such warehouses obtains a receipt which entitles him, or any person to whom it is transferred, to obtain the stated amount of the grade specified. These receipts are bought and sold without the trouble of examining or sampling.

As each grade is exactly specified it is possible to quote the price publicly: hence, not only all members of the exchange but all the world through the newspapers knows the current price of each grade of wheat, coffee, cotton, &c. Any farmer can inform himself as to the value of his produce.

Further, it becomes possible to make contracts for future delivery of specified grades. This is a considerable public gain: for instance, a cotton-spinner can ensure a supply of suitable raw cotton some months in advance, and is therefore able to run his factory to the best advantage, and eliminate any risk due to unexpected rise in the price of his material.

The possibility of making contracts for future delivery involves the possibility of speculating in the produce sold. That

is, a person may buy wheat, cotton, &c., not with the intention of accepting delivery when the time comes, but merely in order to sell again then and pocket the difference due to the anticipated rise in price : or sell for future delivery, although he has no such produce, relying on buying it beforehand at an anticipated lower price. If the market moves in the opposite direction from what he expects he loses accordingly ; hence, the necessity for all transactions being undertaken on the responsibility of a member of the exchange who can be relied on to pay in case there is a loss.

It is impossible to give anything like a full discussion of such speculation here : but it must be pointed out that it is essentially a legitimate and useful business, though very liable to abuse. When an outsider who knows little about the market speculates he usually loses money, and such irresponsible ' punting ' is an evil. But informed and systematic dealing in ' futures ', whether by members of the exchange or other persons, whose judgement about the trade in question can be trusted, has the effect of steadying prices. In particular, use of the exchange such as is made by cotton-spinners throws the risks of the market on to dealers who are best prepared to undertake them, and enables the manufacturer to attend to his proper business undistracted.

It may be added that farmers' co-operative societies, whose primary aim is to secure for their members the best prices in the sale of their crops, have found it advantageous to make use of the produce-exchanges, in order, by means of future contracts, to protect themselves against risk of loss on stocks held.

Another modern development of commerce is the consumer's co-operative societies, which organize retail shops for the convenience of their members. These have been a great success in England among the working-classes, who buy more than a

hundred million pounds worth of goods in that way yearly. The method usually adopted is to charge the same prices as other shops, but as there are no shareholders any profits made are returned to the members in proportion to their purchases; thus, the price is, in effect, lower just to the extent that the co-operation is able, by good management, to save in working-expenses; and experience shows that consumers are able to supply themselves with goods of ordinary quality and make appreciably cheaper than they are supplied through the usual channels of trade. The co-operative societies have united to form a co-operative wholesale society in order to be independent of merchants, and the wholesale society has even put up factories of its own.

10

Finance: Banks

Finance. Nature of saving and investment. Functions of banks: savings bank, land bank, commercial bank. Banking system in Great Britain and United States.

Finance means providing the means of payment for an undertaking; as this usually implies that the person who undertakes has not means enough of his own, finance is nearly synonymous with making loans. Otherwise looked on it may be described as the handling of money in so far as this is a specialized occupation.

The growth in scale of industry, with its corresponding elaborateness of organization, has made finance of such far-reaching importance that it is worth while to examine the nature of saving and investment first; in this way the functions of the financial organizations will be better understood. This is not superfluous

if one may judge by the frequent misconceptions that appear in public writing and speaking. Finance is indeed a subtler development of the industrial system, the use of which is not so obvious as that of occupations which have a more material basis.

The true nature of saving may be seen from a primitive illustration. Suppose that a carpenter who is mostly engaged in working for an employer wishes to set up in business on his own account, and for this end constructs a workshop by the side of his dwelling-house. The process involves saving the value of his time: true, he does not earn any money for the work he puts into it, but he might have worked for wages during that time. If he had he would have had the option of spending the wages on immediate satisfaction, or saving them. He has in effect saved them, since he has not bought any immediate satisfaction with his labour, and at the same time he has invested that amount of value, for he has created a durable object which will help to yield him an income in the future. All saving and investment is fundamentally of the same character; but it shows how intimately money is mixed up with the operation, that even our example is not quite free from the use of money—the carpenter would have had to effect part of the saving in the form of money, in order to have the means of buying the timber for his workshop.

The illustration shows, however, that saving consists essentially in foregoing some immediate satisfaction, and investment of savings consists in buying some object which does not yield satisfaction in itself but produces an income from which satisfaction is obtained later. The workshop is capital, and capital is produced by 'waiting'; by sacrificing the present to the future.

One stage of elaboration is seen when the carpenter, unable to do everything by the direct use of his own labour, works for

money instead, and puts the money aside in order subsequently to buy materials, or perhaps to pay a labourer to dig the foundations for his workshop. A second stage appears when the saver does not put the money into his own business but lends it to help some other kind of production. This may be done directly: e.g. we may suppose the above carpenter to borrow some money from another workman to buy the timber with. But a further stage arises when the loan is negotiated through a third party who specializes in such transactions: here the professional financier emerges.

This more elaborate scheme is usual. Just as a farmer nowadays rarely sells corn to a neighbour to bake and eat, so only a small fraction of the world's savings pass directly to the user of them. The justification for the intermediaries in both cases lies in the increased efficiency with which the work is carried out. Savings, for the most part, accumulate in the hands of banks and other constituents of the financial organization, by which they are directed to the service of industry. It is as if rain, instead of soaking through marshy ground to nourish vegetation close at hand, were guided into drainage-channels, and formed into great rivers, whose eventual purpose was the same one, of fertilizing the soil, but at a distance, and in any direction that may be decided on. The collective stream of savings accomplishes work that could not be attempted by any number of separate rills: it also involves dangers that did not exist before the modern financial organization grew up.

The leading members of the financial world are the commercial banks. A bank is an institution for directing the savings of those who have money to spare, to the uses of industry; but it is an essential characteristic of banks that they do not act merely as agents, to put borrowers and lenders into touch with each other. Banks borrow from some customers and lend to

others, and in lending they are principals, taking full responsibility for the transaction. The process may be explained by considering, first, two classes of banks which deal with the public on one side only.

A government savings-bank borrows from but does not lend to the public. It accepts small sums deposited by customers, allows interest on the amount so held, and undertakes to repay the loan either on demand or at a few days' notice. In order to fulfil these obligations the savings-bank must keep a certain amount of cash on hand, and must use the rest of the money deposited in such a way as to earn the interest promised and cover expenses of management. It does this by lending the available balance to the government, which is always in need of money. The rate of interest earned is only that at which government could borrow elsewhere, consequently the rate which the bank can afford to pay to its depositors is low (usually about three per cent.). The bank serves a useful purpose by encouraging persons of small means to save money that would very likely be wasted if a safe and convenient use for it were not provided: this is an advantage to the individual depositor, and also to the community in that it makes quite a large sum available for investment. The bank has only to keep a small amount of cash in hand, because there are normally more deposits received than withdrawn every day: if any occasion should arise when deposits were withdrawn heavily (e.g. if a number of workpeople were impoverished through a strike) the good credit of the government would enable it to acquire the means of paying at short notice.

There are numerous savings-banks run by private enterprise, and some municipalities have instituted banks on the same plan, using the collected savings for public works such as trams and water-supply.

As a pendant to savings-banks we may consider government land-banks, such as have been established in many countries. Land-banks are for the purpose of making loans to farmers. They do this usually on the security of a mortgage on a farm or on produce, and are supported by governments in order to liberate farmers from their too frequent dependence on private money-lenders. The most essential requirement of such banks is, clearly, good judgement in the granting of loans. The funds for lending are supplied by government: they might quite possibly be derived from the deposits in a government savings-bank. The two institutions combined would make up a complete bank, dealing with the public on both sides: their separateness illustrates the point that a bank does not act as a mere agent between lender and borrower.

The ordinary commercial bank is a company (or firm) which must possess a large capital of its own, in order to inspire the necessary confidence, and which both borrows from and lends to the public. It accepts loans in two forms: current deposits (also called ' demand ' or ' checkable '), i.e. money lodged with the bank and liable to be withdrawn from it at any moment, and time deposits (also called ' fixed '), which are definite sums lent for a definite period, such as six or twelve months. The latter are in the nature of an investment, and the bank pays an ordinary rate of interest on the money lent; but current deposits are a peculiar form of loan, for the borrower undertakes to repay at any time, and the lender feels so much confidence in this promise that he continues to regard the sums deposited as cash. Banks pay little or no interest on current deposits, but they offer a great convenience to depositors in the cheque system. A cheque is an order to the banker to pay some of the customer's deposit to a third party, and so constitute the most convenient way of paying all but the smallest sums.

People with bank accounts do not usually cash the cheques they receive, but lodge them with their own bank, to the credit of their current account. Thus, the cheque system, in practice, effects payment by transferring bank deposits from one person to another (either at the same bank, or through the mechanism of the clearing-house, at another). In consequence of this method of payment spare money collects on current deposit, as bank-customers only keep in cash, by them, just enough for immediate needs. Hence, the first stage in the saving-investment process is to leave money unused on current account at a bank. The bank comes in this way to possess large resources, which it has to invest judiciously. Part must be kept in the form of cash (the English banks keep about 12 per cent.), and the rest is used in loans of various kinds; discounting bills of exchange, purchase of stock-exchange securities, and lending to their own customers.

Thus, even if a depositor does not consciously do any investing, the money saved is not idle, for it is employed by banks in lending, chiefly to merchants and manufacturers. Merchants' stocks of goods and the resources out of which manufacturers pay wages are provided in this way by saving: despite the strangeness of the mechanism, the effect is the same as if persons who wished to undertake production stored up food and raw materials in their own warehouses—saving is essentially not consuming.

Banks, however, do not undertake all classes of investment. They lend, in the form of bills of exchange and overdrafts, on the security of merchants' stocks of goods which it is expected will be sold in the course of a few months, and they advance money for short periods to manufacturers, to meet the expenses involved in carrying out contracts. If money is needed for durable construction—buildings, machinery, ships, railways, and the like—appeal is made direct to the public to lend on their

own account, since the loan would involve locking up money for a long period, and it is not safe for a bank to do so. The way in which such investment is carried out will be considered presently. The part played in it by a bank is merely to hold the money temporarily until the customer has decided on the investment, and again to hold it on behalf of the undertaking chosen, until the money is actually spent, and possibly to advise the customer as to the choice of an investment.

In England there used to be numerous small banks belonging to private persons. The banker was then a local notable, personally acquainted with business-men of the neighbourhood, and something of a patron of business. The introduction of the law of limited liability has encouraged the formation of joint-stock banks on a larger scale, and amalgamation has gone on to such an extent that there are now only a few banks in the country: the five largest are gigantic concerns, with hundreds of branches, and deposits amounting to some hundreds of million pounds each, and the old private banker has vanished, being now represented by the local bank-manager, a mere official and usually only a temporary resident. Banking has grown impersonal: but the few banks remaining have attained a level of trustworthiness combined with enterprise that has given them the highest standing in the world, while the vastness of their business enables them to finance any undertaking, however large.

At the head of the banking system stands the Bank of England; this is occupied largely with acting as banker to the government, and to the commercial banks. The banks each keep money on deposit with the Bank, which provides them with facilities in much the same way as they do to their customers. Cheques outstanding between the commercial banks are balanced daily at the clearing-house, and the accounts settled by means of cheques drawn by the banks on their accounts with the Bank of

England. The Bank is also responsible for managing the issue of paper-money. The existence of a central bank is most valuable in any time of difficulty, in holding together the banking system of a country, giving it leadership, and maintaining public confidence : the plan has now been adopted in most countries.

In the United States the banking system is peculiar, because public opinion has been strongly opposed to a central bank, from fear of the creation of a private monopolistic power in finance. Banks organized under federal-law are not allowed to have branches, and those under state-law cannot operate outside their own state : consequently there are thousands of banks in the country, and while a few of the New York banks do an important amount of business, most of the country is deprived of the services of any institution comparable in strength with the English banks. Although increase in scale of commercial and manufacturing businesses has gone farther than in any other country, banking has not kept pace. The weak and scattered character of banking effort in America has been partially remedied by the introduction of the Federal Reserve System, which consists of twelve central banks, united by the Federal Reserve Board, on which the government is strongly represented.

The banking that has been described in the present chapter, and the other financial institutions referred to, are those of England, as the financial organization is more fully developed and diversified in England than elsewhere. Some features of banking found in other countries differ merely because in England they belong to special institutions other than banks. It will suffice in this very brief account of the financial organization to take the English (perhaps one should say Scottish, as the British banking system grew up in the north rather than the south of the island) banks as typical, and to pass on to a few of the other institutions concerned.

II

Finance: Stock Exchange

Bonds and shares. Stock exchanges. Speculation. Issue of new securities. Insurance companies.

Banks are concerned chiefly with floating capital, such as merchants' stocks of goods; investment in fixed capital is usually represented by securities that are dealt with on the stock exchange. When a company is formed to develop a new business, or to carry on an old one purchased from a private firm, the capital it requires is raised by the offer of bonds and shares to the public: in this way persons who have saved money have the opportunity of investing in the business, directly and on their own responsibility; in the case of sale of an old business the former partners may, in the same manner, retain an interest, and commonly do so. There are many varieties of security, but it will suffice to describe two typical forms, the debenture bond and the ordinary share.

Bonds are an acknowledgement of debt by the company; they are made out in round sums, such as £20, £100, £500, and offered publicly for sale at a fixed price, or occasionally by tender. Sometimes the whole issue is bought up by a dealer and offered to the public by him. They bear a promise of interest at a fixed rate, payable on specified dates, usually twice a year, and of redemption at a specified date: all sorts of maturities are in use, but something between ten and fifty years is usual. The bond is a claim against all the property of the company, and if the company defaults on payment of either interest or capital, the holder is entitled to take legal proceedings to enforce his claim; and very often the claim is secured by a mortgage executed in

favour of trustees who are appointed to look after the debenture holders' interests. But so long as the payments are duly made the debenture holder has no right to any control of the affairs of the company ; he is a creditor, and nothing further.

Shares, as the word implies, constitutes participation in the affairs of the company; in fact, the company is the aggregate of the shareholders. Any person subscribing for one or more shares (they are commonly made out in units of £1) not only contributes so much of the capital of the company, but takes a proportionate share in its risks and profits ; whatever profits there may be are divided among the shareholders—the bondholder receives interest, they receive a dividend—but there is no guarantee that there will be any profits. Shareholders exercise their control over the company at an annual meeting which, by law, must be held in order to elect the board of directors, and sometimes at an extraordinary meeting, to sanction some important proposal of the board, such as the issue of more debentures, the purchase of another business, or the sale of the business itself to another company.

At shareholders' meetings the voting is by the number of shares held : the proceedings are mostly nominal, merely confirming the action of the directors ; indeed, shareholders rarely even take the trouble to attend. But cases have occurred when shareholders have revolted and thrown out a board with whom they were dissatisfied : the legal authority is with them, even if they do not exercise it.

When governments and local authorities require capital for public works they obtain it, like companies, by an issue of bonds to the public. These bonds being not only a claim on the property of the particular undertaking, but a debt by the authority that issues them, are backed by the taxing power of that authority, so that if default occurs it is a sign rather of

unwillingness than of inability to pay. Accordingly, those issued in the more highly civilized countries possess excellent credit, and are sought after at a high price (i.e. at a low rate of interest). Unfortunately, national governments do not restrict themselves to borrowing for public works, but also put out many 'spend-thrift' loans for wars, and even in peace-time, because they will not always demand sufficient sacrifice from taxpayers to meet current expenses. National debts, therefore, have grown far beyond the value of any specific assets purchased with them, and have come to constitute a sort of general mortgage on the wealth of the nation.

Bonds and shares are always made negotiable. The bond-holder cannot claim repayment of the loan before the specified date, but if he wishes to recover the use of his money he can sell the bond to a third party for what it will fetch. Similarly, if a shareholder for any reason wishes to cease participation in the enterprise he can sell the shares. Stock exchanges are organizations for facilitating the sale and purchase of such securities, and the service they render to the community is to render securities more marketable. The stock exchanges, which exist in all the chief cities, possess their own characteristics; that of London is representative enough. The members of the London exchange fall into two groups, brokers and dealers (commonly known as 'jobbers').

A broker accepts orders on commission from the public, and no outside person can transact business on the stock exchange except through a broker. A broker does not, himself, sell the securities asked for, nor buy those offered; he acts merely as agent to find a jobber who is prepared to do so, and he looks after his client's interest as regards price. The broker, however, is responsible for the credit of his client, and must therefore satisfy himself as to the financial standing of the persons he acts for.

The broker does not normally arrange a sale to, or a purchase from, another member of the public ; he goes to a dealer who specializes in the particular class of security concerned—foreign government bonds, American railway stock, mining shares, or what not. The dealer is a merchant in such securities ; he keeps a stock of them, and is prepared to quote a price, or rather two prices, one for buying and one for selling. The margin between the two is the return he gets for his service in facilitating the making and changing of investments. It is very small in securities that are constantly dealt in, such as British Government War Loan, and larger when there is more risk of his being left with unsaleable stock on his hands.

The existence of stock exchanges has the same influence on the sale of securities as the produce exchanges on the sale of wheat, cotton, &c. It makes the price public, definite ; and in ordinary circumstances more stable than would be the case if dealings were conducted privately between merchants : at the same time it offers great facilities for speculative purchases and sales. It is not customary to quote prices for ' futures ' as in the case of produce ; transactions on the London Stock Exchange are settled twice a month. But it is easy to get credit facilities for quantities of stock much larger than the cash capital of the operator ; it is therefore easy to speculate as a ' bull ', i.e. to buy stock with the sole object of selling it later at a higher price, or as a ' bear ', i.e. to sell stock one does not possess, with the intention of buying it later at a reduced price. This practically amounts to betting on the rise or fall of stock ; it is, however, impossible to discriminate between transactions undertaken with that intention and others, identical in form, which lead to genuine investment, and perfect freedom for speculative dealing has the important public advantage of ensuring a stable and reliable market. In some countries laws have been passed

to prevent speculative dealings, but it is really unwise to hinder the action of an essential organ of public utility in order to save amateur speculators from acting foolishly.

The stock exchange does not take part in the creation of new securities: this is the function of the so-called 'issuing houses'. These are usually merchant-bankers of good standing, who have had much experience of the financial world, and have numerous connexions that help them to find capital in support of new enterprises. Borrowers of the highest class, such as the leading governments, employ an issuing house—sometimes a bank—to carry out the clerical work of a new issue of bonds, and pay a small commission for it: and the house may perform a more responsible service by advising the borrower as to the precise terms to offer to investors, and the most suitable time for issue. Ordinary commercial and industrial companies who wish to raise capital, not having an equally high reputation, are glad to get the support of an issuing house of high credit, and pay a good deal for it. This is even more the case with new companies intended to exploit some invention or discovery: without the support of a well-known financial house it is very difficult to get such a venture to the notice of investors. Issuing houses, for the sake of their own name, are careful to discriminate among new proposals. In Germany, where the leading banks do this work, they have established very complete technical organizations to examine the prospects of new companies they are asked to support, so that to obtain the backing of a German bank is a reasonable safeguard against fraud and mismanagement.

When an entirely new enterprise is in question it is usual for a few people who are interested to form a preliminary syndicate to manage the legal formalities of registering a company, and to take steps to raise capital: they are sometimes assisted by a professional 'company promoter', and they usually endeavour to

obtain the support of some well-known issuing house in making their appeal to the public. The issue, whether that of a new or an old company, or even an issue of government bonds, is first offered privately to 'underwriters' who agree to subscribe to the loan in case the public demand is not sufficient to supply all the money needed.

A considerable part of the profits of new enterprises goes in commissions to these various financial intermediaries: but it may be noted that whereas some governments of first-class credit used at one time to offer their bonds by advertisement for direct tender on the part of the public, that system has been abandoned in favour of resorting to the financial organization.

There are many other members of the financial world which, in England, is picturesquely known as the 'city'; but space is lacking to describe them. We should, however, at least mention one group—the insurance companies, which have important dealings with the public. Their business is to offer protection against certain risks, of fire, burglary, accident, sickness, &c., and provision for old age, and for dependants after death. They are able to do this because when taken in large numbers these chances become almost regular. The individual does not know, for instance, to what age he will live, but the life insurance company, dealing with thousands of individuals, knows almost with certainty what percentage of them will live to any given age. Insurance companies are the recipients of large sums of money, paid in premiums, so that they are important investors.

12

Government and Industry

Laisser-faire. Modern internationalism. State action in industry. (a) Judicial control. (b) Services of information. (c) Guidance of production. (d) Industrial enterprise.

The past century has witnessed a great change in public opinion as to the relations of government to industry. The classical economists performed a most valuable work in helping to free industry from the trammels of state control, the unreason of which was so brilliantly shown up by Adam Smith. But no sooner had the doctrine of *laisser-faire* won general acceptance, than the tide of circumstance turned and the state was forced into interference in one case after another, till now the world is so used to depending on government to do things that it is difficult to get due weight allowed for the real merits of private initiative.

The change is due to the improvement of transport and communication, which, in turn, is the product of scientific research, the master-spirit of modern civilization. The invention of the steamship, the railway, the telegraph and telephone have extended the market for most goods to an indefinite area, so that large-scale organization has had the opportunity to show its superiority in production and in commerce. Organization up to the limits of a single country has met with no considerable opposition; it is true that it is more vulnerable than the localized industry of earlier times, as e.g. when railway-transport or electric-power-supply is interrupted by war or strikes, or by an unintentional breakdown of machinery. But whatever the

risks may be, people are not going back to postchaises and candles: they put up with the inconvenience of failures, and resume modern appliances the moment they have the chance.

Organization on the international scale meets with opposition from patriotic sentiment; yet the forces behind it are so powerful that the process of knitting the world together goes on with hardly a break, and nationalism that adopts an obscurantist attitude in this matter will pretty certainly go under in the struggle. Even such a violent break as the recent war passes away, and after a few years Frenchmen are found welcoming trade and intercourse with Germany; while the countries that are extreme in their protectionist tariff policy, though they effect changes in their foreign trade, find that they cannot do without foreign goods and foreign markets for their own.

It is therefore inevitable that the world should be organized on a large and ultimately on an international scale. The organs of this wide intercourse cannot be evolved quite independently of public authority: the development which has occurred in connexion with railways will be repeated in other directions; railways have to be either state property or closely regulated by the state, to avoid an intolerable private monopoly, and the state is similarly forced into interference in other cases when private interests grow threateningly strong. The situation will, indeed, only differ in this respect, that industrial organization coming to transcend state boundaries will compel the growth of a public authority of wider powers, so that if nothing else overthrows the system of unrestricted national sovereignty, a world-state will arise in order to control world-wide economic influences. The practical problem is therefore to devise methods of exercising the necessary state control that will not waste the energy, fertility, and inventiveness of individual effort.

The present activities of government in connexion with in-

dustry may be classified into (*a*) judicial action, (*b*) promoting knowledge, (*c*) exercising guidance, (*d*) carrying on industry.

(*a*) Government undertakes many duties of a judicial kind beyond the maintenance of order. For a long time past it has been found necessary to impose regulations on factories in order to safeguard the life and health of the workers. The law forbids the employment of children below a certain age; of women, and sometimes of men, for more than a certain number of hours; it requires certain arrangements for hygiene and so on. This movement, which is accepted universally, has culminated in the creation of the International Labour Office, a branch of the League of Nations: this body has already been able to exert an influence almost amounting to compulsion with regard to hours of labour and other industrial conditions.

Another aspect of this class of state interference is the introduction of social insurance. This originated in Germany, but now the most complete system is found in Britain. It covers medical attendance during sickness, provision for old age, disablement through accident, maternity allowances, and that insurance against unemployment which the newspapers have unfortunately damned with the misleading term 'dole'. Though there is no space to discuss social insurance as a whole it is necessary to say a few words on the last point.

The system is one of insurance to provide subsistence during involuntary unemployment. The allowance is the same in all occupations: it therefore has to be regulated in accordance with wages of the lowest level. It does not even come up to what a labourer can earn, and is far below the normal standard of a skilled man, and is forfeited if the recipient refuses an offer of suitable work. The funds are mainly provided from industry —contributions by employer and employee—supplemented by a small state grant that falls on other persons in the community.

Bearing in mind that the contribution laid on employers necessarily, in the long run, makes them unable to offer as high wages as they could without it, it is fair to say that most of the money comes out of the pockets of the workpeople themselves. The workpeople have, in fact, given their assent to a plan which distributes the funds available for the payment of labour more evenly and continuously, instead of concentrating the loss due to bad trade on those few who are unemployed at any given moment. The system has suffered strain, and even some abuse during the period of abnormally bad trade following the war, but no one who is familiar with the circumstances doubts that it has brought a considerable gain in general welfare.

Again, now that organization of employers and employees has reached a national scale, it is found that wage disputes affect the general public so seriously that the government cannot regard itself as standing outside them. Interference takes various forms, from conciliation, through arbitration, to a complete system of judicial awards. The fullest experience of the latter has been obtained in Australia, where a branch of the High Court is occupied in adjudicating on disputes between workpeople and employers, and standard wages and hours have been laid down by the court. In England the part played by the state has not usually gone beyond that of mediating with a view to getting the parties to agree ; but in the case of sweated occupations, 'Trade Boards' have been set up, with authority to establish a minimum rate of wages, a plan which has worked with success when the existing wages are abnormally low.

(*b*) The most unexceptionable work of the state in connexion with industry is that of supplying information. The world-wide organization of production and commerce that has grown up makes it imperative that good information should be available to guide it. Private firms and companies collect much

information themselves, and particular industries set up bureaux for the mutual information of members, but there remains much that can only be done by public authority. Statistics can only be obtained with completeness by the aid of compulsory powers, so that now the civilized nations collect very comprehensive statistical information on output, trade, prices, stocks of goods, consumption, and so on. In so far as manufacturing, transport, or commerce has to be undertaken by governmental agencies much dependence will have to be placed on the scientific analysis of such information, as a substitute for the intuitive decisions of the private business man : indeed, the heads of large companies at the present time find it necessary to maintain a statistical staff for their own guidance.

Then governments obtain reports through their consular staff as to trade conditions in foreign countries, through their agricultural departments as to the condition and prospects of the crops, through their departments of commerce, mining, &c. as to conditions in the industrial regions of their own country. A vast mass of information is published periodically by state departments, and further special commissions are appointed from time to time to investigate industrial problems that are regarded as of pressing importance. Many of these commissions, including among their personnel distinguished economists, lawyers, and men of affairs, have published reports that are important additions to knowledge, and serve to guide subsequent legislation.

Not content with investigating existing conditions governments have found it necessary to support research, in the proper sense of the word. It was noted above that large manufacturing companies sometimes devote considerable funds to maintaining scientific research with a view to improving their processes ; and where this undertaking appears to put an undue strain on

the funds of a single company the various producers in an industry may club together to support a research institute. In the latter case the movement is rarely quite without aid from the government. In the Great War especially, governments were forced to recognize the indispensability of science, and largely increased the support given to research: in England a department of scientific and technical research was formed and provided with a large annual grant, the Royal Society being invited to assist in the administration of the money. Even earlier, however, various scientific activities which make no close appeal to profitable results were maintained by government—we may mention the National Physical Laboratory and the National Botanic Gardens at Kew. Indeed, the support which the state has long given to universities is partly based on the argument that the scientific research undertaken by them reacts favourably on the industrial prosperity of the country.

It may be noted that in Russia, where foreign trade and large-scale manufacturing are undertaken by the state, it has been found necessary to pay special attention to forming an economic department for the continuous and scientific study of the problems involved.

(*c*) In the world as at present organized, production is determined by the initiative of millions of private persons acting independently. The few state enterprises, chiefly railways, make no sensible difference to the accuracy of this statement, and even the marked tendency to the growth of monopoly, which is found everywhere, has not yet changed the character of economic life sufficiently to invalidate general conclusions about it. The classical economists, discussing a world in which production depends on individual initiative, showed that the maximum production would be arrived at by leaving enterprises

to develop natural resources as the individual thought best. Governments, almost throughout the world, however, have been unwilling to accept this conclusion ; they have considered that they would do better for their countries by guiding production into certain channels than by leaving it alone. The controversy is a very thorny one, and we cannot enter into it here : all that is necessary is to point out the facts.

Governments sometimes give bounties (raised by taxation which falls on other industries) to increase the profits of certain industries which they consider more deserving. This has been done for shipping and shipbuilding, on the ground that a country should not depend on others for such essential services : it is being done for air transport, which is still in such an early stage of development that it can hardly be expected to pay : it has been done both on the Continent and in Britain for the manufacture of sugar from beetroot, though why that industry should receive special favours is not clear.

Occasionally, prohibitions have been used for the same purpose. The most important example is that some countries refuse to allow foreign ships to carry on coasting trade (i.e. trade between two ports in the same country), with the aim of stimulating the national shipping industry.

The favourite device for deflecting the production of a country to ways that the government thinks desirable is the customs tariff. Protectionist tariffs have been introduced in most countries, the aim usually being to favour manufacturing. This is the avowed aim in the ' new ' countries, where agriculture and mining first arise : it is usually held that the country should show an all-round production, and steps are therefore taken to assist local manufactures to compete with the great exporting countries. This, indeed, is the history of tariffs even in Germany and the United States, for protection was adopted

in the first place to contend against the then overwhelming manufacturing superiority of Great Britain. Those two countries, possessing great national resources, a very large home-market free from tariffs, and an educated and enterprising population, have established their position as leading manufacturing centres and exporters to the world-market (whether on account of or despite a protectionist policy is disputed). But as it is obvious that not all countries can live by exporting manufactures to others, the usual effect of protective tariffs is to establish industries on a small scale for the local market, especially in the simpler kinds of manufacturing, leaving the highest grade of goods to be imported from Western Europe or the United States. Occasionally, agriculture has been favoured by protective duties: this is, of course, only possible where agricultural products are not produced in sufficient quantity, i.e. in manufacturing countries. Germany is the most important example.

Where the transport system is monopolistic it is possible to favour industries and localities by means of freight rates. Railways are usually capable of some influence of the kind, and when they belong to the state are often so employed (e.g. in South Africa corn and coal for export are carried below cost, the loss being made up by the rates charged on other goods). Even in the United States, though internal free trade is assured by the constitution, attempts have been made to favour local producers in a state (Texas) as against the rest of the union by manipulation of railway rates.

(*d*) Finally, a government may itself undertake industrial production. The instances of this may best be classified according to the motive that induces the state to undertake the work.

First there is the motive of raising revenue. In some countries instead of taxing the output of such articles as

tobacco or matches, they have been constituted a government monopoly; they are produced in state factories and sold at a price which is not regulated by cost of production, but is intended to bring in a large amount to the Treasury. This cannot be well compared with ordinary business: but it is no less desirable than in private trade to run the factories efficiently, for the Treasury would suffer from any waste in them. An impartial account of such manufacturing and trading would be instructive as to the state's capacity for industrial activity.

Next time we may take the motive of defence. In peace-time governments maintain arsenals and dockyards, and during the recent war there was a sudden and vast expansion of government undertakings for military purposes. The experience showed that, under the spur of patriotic feeling, a civilized nation can do great things in an industrial way. But the organization and output have not to stand the test of competition, so that it is difficult to draw any conclusions as to what is possible in normal times.

Again, economic activity may be undertaken by the state in pursuance of a definite policy. The leading case of this is the policy of the Soviet government of Russia. They attempted, at first, to keep all trade and production in their hands, but finding that impracticable adopted a 'new economic policy' under which foreign trade and most large-scale production was retained by the state, being partly managed by 'mixed' companies in which state and private capital are associated. The results so far have been very poor: but it must be remembered that the experiment has been tried under most unfavourable conditions. Russia has little ability of the kind needed for large-scale business; it was weakened and impoverished by war, revolution, and blockade: and the industries had to be reconstituted almost from the beginning in the face of a breakdown of transport, shortage of materials, and failure of credit. It

seems to show a good deal of organizing ability on the part of those in charge that anything has been achieved, but it is too early to draw conclusions as to the permanent possibilities of such a scheme.

The usual business undertakings of public authorities fall into the class of public-service industries, discussed in Chapter 8. Here the aim is to provide the community with an essential service that would otherwise be in danger of falling into the hands of a private monopolistic group: but undoubtedly the central or local government has often been influenced by a policy similar to, though less extreme than, that of Russia, believing that it is wise, on non-economic grounds, for the community to own the means of performing important services for itself. There are now thousands of examples of state and municipal undertakings: it is difficult to get an unbiased account of their measure of success. The chief conclusion one arrives at is that government enterprise is practicable to an extent that depends on the intelligence or character of the people. A definite evolution is found as a country gains in power of self-government; business can be conducted by government departments in England now that would have broken down in the eighteenth century from corruption and incapacity; government undertakings in such countries as Sweden or New Zealand will succeed when similar undertakings in countries of lower general intelligence have to be left to private enterprise if they are undertaken at all. If the electorate, on whom control ultimately rests, have sufficient political sense to offer good conditions of service there is no difficulty in getting the most highly qualified technicians to manage government enterprises. It is essentially a question of how far the democracy can educate itself to support, and give a fair chance to, well-thought-out forms of organization.

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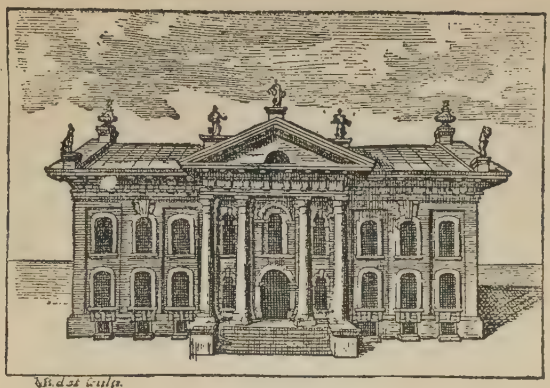

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